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BULBS FOR POTS
AND SPRING PLANTING IN THE GARDEN

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A CATALOG OF BULBS OF THE AMARYLLIS, IRIS, LILY,
ORCHID, ARUM, OXALIS AND OTHER PLANT FAMILIES
Culture Directions For All Bulbs

SPRING 1946

CECIL HOUDYSHEL

1412 THIRD ST.

LA VERNE, CALIF.

A PERSONAL LETTER, TO YOU

I would like to write to each one of you separately, a personal letter. But to do that I would need to give my full time, at least 8 hours per day, for nearly one year. The cost of postage would be \$900.00. The average labor cost of writing a letter is about 50c. I would have to sell the Rancho de las Flores to pay the bill. I would be out of business because I would have no time to take care of it during this time.

This reductio ad absurdum will doubtless prove why I apparently write few letters. I do try to answer letters which expect a reply. Long hours, even into the night are spent thus but still I answer only about 10% of them. This distresses me because I want to give information when required. I want to express my friendship and appreciation to all.

Therefore, I tell you in our catalog about the bulbs and how to grow them. In each catalog I write you a personal letter.

This letter is that of one friend to another. I want to thank you for the many orders. I appreciate also your many reports about your bulbs and your friendly comments. Your expressions of sympathy for me in the grief I had were helpful.

This letter is my only reply to most of you. When we write letters we all like to comment on things of mutual interest. We are all interested in flowers. We were all interested in the war which we entered only because we hoped to gain a lasting Peace for the world and the freedom of all countries and people and to stop aggression. We are all interested in the Peace.

The denouement appears to prove that America is the greatest of the Nations in wealth and development of resources. We do not have the greatest area, the most inhabitants nor are we greatest in undeveloped resources. It is evident that our safety requires that we hold the good will of other great nations. It is also evident that our unselfish help to others has not been enough to hold that. We must remain great and strong. We must even become stronger. It often appears that strength gains a greater respect than right. We must have both.

Every one of us is an important unit in that force which will create a better and stronger Amer-

ica. We can, individually, become better and stronger for our first effort. Resources and its people measure the strength of a nation. Each of us has a personal responsibility to make America greater by becoming better Americans. That does not mean shooting a fire cracker on the Fourth of July. It means for all, more and better educational advantages; a higher morality; less crime; more and better health facilities and health education; larger families in the middle (better) classes and the more intelligent; better care of children in all classes.

Many more things could be mentioned but definitely it does not mean that America can become greater by means of more and better cocktail bars where a perfect lady can enter and have her drink or even become intoxicated, nor that more cigarettes, cola drinks or narcotics will make us stronger.

Education is very prominently in the public mind. We are not entirely satisfied with proven results of modern education. The quantity is greater than that of 50 years ago,



THE HERBERT MEDAL

but the quality is not as satisfactory. Unfortunately few people recognize the true objectives of education nor its true meaning. To very many its chief aim is to become able to teach, practice medicine or law, to become an engineer or to earn a living some other way. They overlook education's fundamental purposes. Educators themselves have overlooked it. Education develops the **ability to live**, rather than to exist.

Let us examine the definition of "A Liberal Education" given some 75 years ago by one of the world's greatest thinkers of all time, Thomas H. Huxley. He wrote:

"That man, I think, has had a liberal education who has been so trained in youth that his body has become the ready servant of his will and does with care and pleasure all the work that as a mechanism it is capable of; whose intellect is a clear cold logic engine with all its parts of equal strength and in smooth working order, ready like a steam engine to be turned to any kind of work, and spin the gossamers as well as forge the anchors of the mind; whose mind is stored with great and fundamental truths of nature and of the laws of her operations; one who, no stunted ascetic, is full of life and fire, but whose passions are trained to come to heel by a vigorous will, the servant of a tender conscience; who has learned to love all beauty, whether of nature or Art, to hate all vileness and to respect others as himself."

Many educational courses are planned to meet "practical" needs only. It is the easy way to gain more pupils, create more teaching jobs and increase salaries. It meets the pupil's and parent's objection that Mary does not like Arithmetic and Algebra and does not need them. This fact is overlooked, that a study of Mathematics is necessary to mental development and training and is practical to anyone. Or that Johnny does not like the study of English, Latin or a modern language and does not need it to be a farmer, a mechanic or even a merchant. What a tragic error. Words are necessary to thought and understanding as well as to expression. The mind cannot develop beyond the vocabulary at its command. Words are the images of ideas.

This is written, not to educators but to those who need and desire education for themselves and for their children. Educational opportunities are not limited to schools. It should not cease with graduation from school or even college. It continues thru life and is available to all who are able to read.

The need for beauty is felt by every well balanced mind. Beauty has two sources, Nature and Art. Nature furnishes us flowers which Art and Science have improved. The importance of flowers can scarcely be over emphasized. In joy and in sadness, in health or in sickness we need them. They are needed by rich and poor, by saints and sinners and they uplift all who allow them. We have just received an order from a returned Marine with this comment: "I agree with you that flowers are not a luxury. You would have been surprised (I would not have because many have already told me this) to see how many Marines had flowers and ferns planted around their quarters, 'out there,' all the way from Guadalcanal to Okinawa."

It is my business to sell you the beauty that is produced by flowering bulbs. That beauty will furnish you both inspiration and relaxation. But where you get your flowers is not as important as that you have them and I am wishing you all the greatest success in their culture the coming season as well as health, happiness and success in all things.

Sincerely,
Cecil Houdyshel

Bulbs for Presents

Bulbs are ideal presents for Mother's Day, Father's Day, Birthdays, Anniversaries or on any occasion where a gift is indicated to one who loves flowers. Bulbs are not only satisfying but they last many years. Buying bulbs by mail is not as tiresome as shopping and it is as safe.

TERMS AND INSTRUCTIONS FOR ORDERING

Read the following carefully. It will avoid delay or misunderstanding.

Sales Tax. California customers must add 2½ % for state sales tax.

Order Early. Late planting is less favorable but better than not at all.

Remit with order by check or M. O. Currency or coins are acceptable but we are not responsible if lost. Stamps reluctantly accepted at 8% discount. **Please do not ask for credit.**

C. O. D. We do not ship C. O. D.

Postage prepaid on orders of \$1.00 or over. Under \$1.00 add 10c extra.

Insurance. Customers are urged to insure every order. Orders are sometimes lost. We have had orders go astray in a distance of 30 miles. We have never lost one insured package. Costs little. Send 3c extra for values to \$5.00; 10c for \$5.00 to \$25.00. Insure your order and it will receive more careful attention in transit. We accept no responsibility for safety of uninsured packages.

Express is much safer and is advised for large or valuable shipments especially in very cold weather in north. But it is usually a little more expensive and we ship by express only at your expense. We add extra value, either more bulbs or larger ones, on express shipments and also use more insulation. Express cars are heated but mail cars are not. On small packages one can avoid heavier express charges by adding about 15% for extra heavy insulation.

Prices given are for one bulb unless otherwise stated. A dozen costs ten times the price of one. Six bulbs are sold at the dozen rate. If not otherwise priced, 100 bulbs are sold for the price of 7 doz., or 70 times the cost of one. Not less than 100 are sold at 100 rate. 50 are sold for the price of 4 doz.

Wholesale. Lack of labor has prevented us from digging enough of our bulbs to supply many at wholesale or to give discounts to dealers. We were therefore unable to publish a Wholesale Bulletin for two years. Our quantity, prepaid prices are lower than many published wholesale prices.

Garden Club Bulletin is "out," for the same reason. Garden Clubs should take advantage of our 100 rates.

Foreign Orders. Postage is prepaid if no greater than to our 8th zone. Best to remit a little extra. If too much we send extra bulbs. We cannot accept orders for bulbs at the 100 rate to be shipped abroad, postpaid. We have several times filled orders from Mexico and other foreign countries, for Gladiolus bulbs at the 100 rate, only to find the postage required was almost equal to the price received.

Canadian Orders. Canadian customers may now import bulbs from us. You must send us a "Permit To Import." Ask your Post Master for instructions about how to obtain this.

Errors. Our packers make a few, not many. We want to correct them. Notify us **at once** in case of shortage or error. **Unpack** your order as soon as received. Don't wait two weeks, then tell us the bulbs were mouldy.

Partial Shipments. If all bulbs ordered are not included in the first package received, a colored slip informing you will be enclosed. Do not discard this with packing material. Pay attention and avoid correspondence for both of us.

Substitution. If out of a variety, we usually substitute one as near like it as possible, as good or better and of equal or greater value. If you do not approve this, say, "no substitution."

Guarantee. Our bulbs are true to name, and healthy. We do not, however, accept any responsibility for their performance after planting since we cannot control the conditions of their growth. If, in your opinion, our bulbs are not up to our specifications, please notify us at once when you receive them. But do not return them until we explain. Customers some times err in judgment and one returned dwarf Baby Callas

because they were small. Another returned *Ranunculus* because they were too dry and dead looking.

Culture Directions are not sent with bulbs as all necessary information is given in this catalog.

Catalogs. **Spring Catalog** is mailed Jan. 15. **Fall Catalog Aug. 15.** If no orders are received for two years, names are dropped from our mailing lists. If you are no longer interested in bulbs, permanently or temporarily, please ask your Postmaster to return this catalog at our expense.

Correspondence. We enjoy and appreciate the friendly letters we receive. We answer these twice a year in our **Introductory Letter**. I regret that I am unable to write individually to each. On some days in the busy season our first class mail will go over 250 pieces. At this time we must use our too small office force for packing bulbs and my time is almost wholly taken by supervision of ranch and my part of office work. No day's work is shorter than 10 hours and sometimes extends to 16 or even more.

We receive many requests for information about growing bulbs. This catalog is written to furnish that as well as to list the bulbs. Most inquirers show that the writer did not read the catalog as the very information asked for is in it.

We publish over 60,000 catalogs per year. The volume of correspondence has become greater than is possible for me to take care of. If you are obliged to ask a question enclose a self-addressed postcard for reply.

Identifying Bulbs. We can usually identify bulbs. Send flower, foliage and if possible, a bulb. Give all the facts known. Enclose self-addressed postcard. We do not undertake to identify horticultural varieties of *Gladiolus*, *Iris*, etc.

Time of Delivery. We deliver all bulbs within the correct range of time for planting or before. With a grave shortage of labor we have sometimes been less prompt than we like. But we have some new and experienced office help now and are prepared to get out our orders more rapidly than last year.

We expect to be able to deliver most bulbs ordered from this spring catalog with fair promptness. Most of the bulbs listed are ready for delivery. A few that we must buy, like *Caladiums*, *Begonias* and *Gloxinias* may not be delivered to us before Feb. 1. Certain other bulbs like *Crinum*s, *Amarcrinum* and large size of *Amaryllis* are left in the field to be dug only as ordered. Thus you will get a fresh dug bulb after the delay necessary to dig and dry a little.

GENERAL CULTURE DIRECTIONS

The best bulb soil is a rich sandy loam. Only a few, like Bearded *Iris*, prefer heavy soil. But nearly all bulbs do well in heavy soil, especially if plenty of humus is added.

All soils require the addition of large amounts of humus. You should compost all weeds, leaves and small branches. If possible, add manure to this and when well rotted and fine, turn under and thoroly mix with the soil.

Fertilizers. Animal manures are the best. Use them with compost as explained. Do not use fresh manure except as a light mulch for certain growing plants and experiment on a few first as too much quickly destroys a plant. Do not add fresh manure or commercial fertilizer to soil just before planting bulbs or seeds. It would be as logical to give a day-old baby a tough steak, a piece of apple pie and two cups of coffee. Fertilize only healthy, thrifty plants. What would you think of a doctor who ordered a big meal for a sick man as a means of recovery? Do not fertilize when the ground is dry and plants need water.

After Blooming, many persons neglect their bulbs. A *Gladiolus* must grow and fatten at least two months after flowering. *Amaryllis* should grow with luxuriant foliage until late November or longer if it does not begin to yellow.

Let us consider the annual growth cycle of a bulb.

A dormant bulb contains a flower bud and short new leaves. There is food stored

in the form of starches, etc., and also enzymes for digesting this food. While dormant, the stored up starches are turned into soluble sugar. Roots, buds and foliage begin to develop in their natural order and your care is rewarded. When thru flowering, the bulb has become smaller and is soft instead of firm and plump. This is a critical time. The bulb may appear at a pause for a short time but when a good root system has developed it will begin active growth. Encourage that. Give them food and water. Enough, not too much. The longer you can keep it growing, the larger and better will be your resulting bulb for next year. The yellowing of foliage will signify the bulb has reached full development. If you do not feed and water your plants, pets, domestic animals and children when they are awake and hungry, they do not thrive. If you know how to make a husband happy (or a wife) you should know how to make a plant "happy." Don't "love 'em and leave 'em," and over-coddling is often as bad as neglect.

Depth and Spacing often cause too much concern. Bulbs usually have sufficient adaptability to do well under widely varying conditions. In a general way, bulbs should be about two or three times their diameter apart. Small bulbs like *Ranunculus* No. 3 may be covered 1"; bulbs the size of a Daffodil covered 4" to 6". Bulbs with a heavy top need deeper planting to maintain an erect position. Planting in light sandy soils should be deeper than in heavy soils. In very cold climates, deep planting protects bulbs from damage from frost. Few bulbs are too finicky about their depth and many of them have the ability to correctly adjust themselves to the most favorable depth if left in one place a few years.

Alibis. Many amateur growers refuse to accept responsibility for their failures when they result. They blame the bulbs, but not themselves, the weather, their soil or pests. Therefore they do not learn from the best teacher, **experience**. Luther Burbank said, "A failure is an accomplishment." It is, if you learned by it.

ACID AND ALKALINE SOILS

Many plants thrive in neutral, mildly acid or mildly alkaline soils and some will thrive only in distinctly acid soils. In the latter class are included Rhododendrons, Callas and most shade loving plants.

The acid-alkali balance is expressed in pH units. pH 7 is neutral. Below that the acidity increases, above it the alkalinity increases.

Soiltex Outfit. This little testing kit will enable you to determine the pH of your soil. No chemical knowledge is required. Directions for use are included with lists of plants and their preferred pH. Price \$1.00 postpaid.

If soils are too alkaline or if plants to be grown in them require more acidity the best remedy is to incorporate much humus. Also improve the drainage, as lack of good drainage increases alkalinity. Peat is most acid usually, though some American peat has become alkaline. Oak leaf mould is more acid than other leaf moulds. Use much leaf mould or peat (preferably imported) for Gladiolus, Callas, Arums, Lilies, Haemanthus, Nerine, Orchids and all plants that require acid soil. It is best to buy peat locally on account of the high cost of transportation. But be sure it is imported Canadian peat with acid reaction. It should be pH 2.5 to 4. Test the peat offered you with Soiltex and don't buy poultry peat.

Canadian Peat. The most acid now obtainable. We can furnish this to local or nearby customers who call for it at \$5.00 per bale. 10 lbs. for \$1.00. Or we will ship by express, f. o. b. for that price. Ask your express agent the cost before ordering as these bales weighed when we received them over 100 lbs.

Garden Labels. One should label choice bulbs. We use a heavy wire bent on one end to form an "eye" into which we wire an ordinary tree label. We also keep a written record of the position and order in which we plant bulbs. We can furnish tree labels for \$5.00 per 1000; 500 for \$3.00; 100 for 90c; smaller quantities at 1c each. Postpaid.

Rootone. We know of really remarkable results from the use of Rootone, a plant hormone powder that induces quicker rooting of cuttings and bulbs and sprouting of

seed. As a result of its action, bulbs make a more vigorous root system quickly and thus the flowers are earlier and larger; the foliage stronger and when dormant the bulbs will be found to be larger and with greater increase in number. We suggest you touch the base of a bulb to the powder until covered by a thick film. Dip the end of cuttings into the powder. Tumble the seeds in a jar or in the seed envelope with the powder. When the seeds are coated, roll them out and save remaining powder. Rootone will treat from 60 to 300 times its weight of seed and thousands of times its weight of bulbs.

We especially advise its use with spring planted Amaryllis bulbs as at this time the roots may be absent or partly dried.

Price. One-half ounce is a good supply. Mailed, postpaid for 50c. Use directions above. We can supply in 1 lb. cans (for extensive plantings) at \$5.00, postage 15c extra.

Vitamin B-1 is a useful stimulant for plants, we believe. We have soaked the roots of Amaryllis in flower in the solution, when transplanting and the flower was uninjured, lasted for days and seeds were ripened. We have used it successfully with other plants in transplanting. Price, **Bottle** of 100 tablets, 75c.

Directions for use, applying only to our own tablets. In transplanting bulbs or any plants, loose roots, dissolve 5 tablets in 1 gal. water. Soak roots in this 15 to 30 min. Pour solution around plant when set. To stimulate growing plants, for the first application dissolve 1 tab. in 2 gal. water. For succeeding waterings use 1 tab. to 4 gal. of water once a week.

Warning. Do not soak dormant bulbs in Vit. B-1. It rots them.

Information Please. The flower lover should be a student as well as an experimenter. We make our **Culture Directions** in this catalog as complete as possible and until and if we write a book on the subject we are able to add little.

You should subscribe to the **Flower Grower**, Albany, N. Y. Price \$2.50 per year or two years for \$4.00 in U. S., Canada, Mexico, Cen. and South Am. Other countries, \$3.00 per year.

I suggest you join the **American Horticultural Society** and receive their Quarterly Journal, **The National Horticultural Magazine**. Send us \$3.00 for membership and subscription for one year.

All plant lovers should also join the American Amaryllis Society as suggested under "Amaryllis Family."

Bailey's Cyclopedia of Horticulture is probably the most complete work ever published about cultivated plants. Arranged alphabetically. Three large volumes, 3639 pages, profusely illustrated. We will send postpaid for \$25.00. Sales tax in Cal., 63c.

Bailey's Hortus Second. This large, 778 page volume is useful even if one owns the Cyclopedia as it lists additional plants and bulbs. Not illustrated. The culture directions are brief. But our own are usually sufficient.

BULBS AS POT PLANTS

Bulbs are the most desirable of pot plants and may be easily forced in the living room or kitchen. Their response is much more rapid than that of a recently potted non-bulbous plant because of their storehouse of food and energy in the bulbs. Even the flower bud has formed. The reward is often an outstanding flower in a few weeks. But their desirability scarcely needs any promotion. Our grandmothers grew and loved their potted bulbs. They are more popular today and there is a greater need for them than ever before. Many returning service men, former customers and prospective new ones are asking for our catalog. They state they are happy to get back to normal living and the enjoyment of flowers in the house and garden. Flowers are a stabilizing influence for the war-weary, those who are sorrowful and depressed as well as the gay and carefree.

It is not too late to pot bulbs. Many can be planted in the garden in the south now or in the early spring in the north. This is the best time to pot Pink, Yellow and Spotted Leaf Callas. In Feb., begin to start Tuberous Begonias and Gloxinias. Fancy Leaf Caladiums require either warm weather (about June) outside or a warm room if potted.

Amaryllis can be successfully potted now. We prefer to pot them by Dec. but with or without Rootone one can have excellent success by potting in Feb. or Mar. and we still fill many orders in Apr. But it is much better to start them earlier. Do so, if possible but better late than not at all.

For potting at this season we recommend the bulbs already mentioned and those following: Agapanthus, especially the dwarf "mooreanus minor." For emphasis, I will mention my favorite of all potting bulbs again, Amaryllis; Amar-Crinum Howardi; Clivia; Crinum Cecil Houdyshel (if you have room for a very large plant); Elisena; Haemanthus Katherinae and H. multiflorus; Hymenocallis, Tropical Spider Lily; Sprekelia formosissima superba, the Orchid Amaryllis; Tulbaghia; Oxalis; Cymbidium Orchids; Yellow, Pink and Spotted Leaf Callas; Fancy Leaf Caladiums; Tub. Begonias; Gloxinias; Billbergias. Most plants if not too large can be grown in pots. Gladiolus are good forcers but too tall for the house. I have not mentioned Lilies as it is rather too late to pot for forcing. They might flower, but late and it is better to plant as soon as possible in the garden.

POTTING DIRECTIONS

The pot for a 2½" Amaryllis bulb should be about 7" diam. This is about right for most bulbs of that size. Give larger or smaller bulbs, pots proportionate in size. Small bulbs may be planted 2" or 3" apart in pots up to 6" diam.

It is most important that drainage be perfect and the soil of a friable texture that allows water to drain perfectly. Cover the hole in the bottom of the pot with reversed bits of broken pots and on top of that small pebbles, then coarse sand will help. Imperfectly drained soil often causes bulbs to rot before starting and if they start they do not grow and flower well. Yellow tipped leaves often indicate poor drainage. The pots should be clean and scalded.

The proper soil is a rich sandy loam with the addition of thoroly rotted leaf mold. Add peat or oak-leaf mould for acid loving plants. Use no fresh manure or other fertilizer at planting. Be very discreet even in using old rotted manure. Rotted dairy manure is rather safe. A heaping tablespoonful of bone meal is good. Thoroly mix all ingredients.

Most small bulbs should be planted just under soil surface.

An Amaryllis and most large bulbs may have ⅔ of bulb above surface. When placed, the soil may be settled by a thoro watering, once. After that no more water is usually needed until after growth begins, altho the soil should not become quite dry at base of bulb. A wet condition very long often rots dormant bulbs before they start. The soil surface may appear dry and yet be too wet for starting bulbs at center of pot.

Most bulbs should have a cool room, about 60° while rooting and only slight moisture. When a bud or foliage gives evidence that growth has started, bring the pot to living room temperature, of about 70° and water slightly more. It is not time to water them freely yet. Do that only when flowering or in full growth. Do not overwater at any time. Sufficient time between waterings must be given to allow excess water to drain away, so that air penetrates and bathes the entire root system, tho still damp. When in full growth and bloom feed the bulbs about every 2 or 3 weeks with very weak liquid manure. It should be only amber tinted, the color of weak tea. Proper feeding will result in luxuriant growth. Too much yellows the leaves, because the root hairs are burned off.

Sun exposure. Note under the listing the requirements for sunlight. For those needing full sun use a south window, uncurtained. For half sun an east window may be just right. If it proves to give too much sun use a curtain. Plants react with certainty to too much sun by the burning of foliage or by spindly growth or too long foliage if not enough. Turn the plants around every few days for symmetry of growth.

It is very important to continue watering and feeding after bulbs are thru flowering. At that time they are rebuilding lost tissues, increasing in size, making offsets and finally constructing new buds for next season. At this time they will also store up food to

support the early growth the next year. This is where most amateurs fail in getting results the following year. Some even write and ask me if they should cut off the foliage and dry up the bulbs at once, after flowering. Plants are living beings. They feed, drink, breathe, grow, react to light and heat and die the same as you if not permitted to follow nature's way. If they do not succeed, however, very many blame the bulbs. You will succeed with intelligent care. Blame yourself or the conditions of growth when you have an occasional failure and you will thus learn. There is an element of chance in growing anything, but it is reducible. That makes it interesting. Match your skill against all unfavorable possibilities and learn to overcome them. That is your life problem also. There is a cause for everything. Find it. Give less credit to "luck" and "chance."

ARRANGEMENT OF THIS CATALOG

is by Plant Families, not alphabetically. We also try to group more closely related plants together. You need to read all the catalog. Many customers write us that they do; some read it several times. There is information on every page.

In the following lists, the **genus** (plu. **genera**) is mentioned first. After it, the **species** (plu. also **species**) or horticultural variety is named. Thus we list *Amaryllis ambigua* or *Amaryllis* "Sibyl Houdyshel," tho it is more botanically correct to say *A. hybrida*, var. *Sibyl Houdyshel*. For the sake of brevity we shorten this. Please note the initial of the genus is used for the second and succeeding species. Thus, the initial *A.* may mean *Amaryllis*, *Alstroemeria*, or *Agapanthus* according to the species listed just preceding.

THE AMARYLLIS FAMILY—*Amaryllidaceae*

This family includes the bulbs from *Agapanthus* and thru The *Alliae*.

The **American Amaryllis Society** is composed of *Amaryllis* lovers thruout the world. Each member receives *Herbertia* annually. It is a beautifully illustrated volume, on fine book paper, of about 250 pages. Therein is discussed the best culture methods; descriptions of new species; notes on *Amaryllids* in their habitat; reports on experiments in crossing, culture, propagation, etc.

I invite you to become a member by sending me the annual dues of \$2.50 when you send your bulb order. This will entitle you to the 1944 *Herbertia*," vol. XI.

This volume has been long delayed in printing, due to lack of labor, but is now almost ready and will no doubt be in the mail by Jan. Vol. XII is also ready for the printer and Vol. XIII is almost ready. These will follow at intervals of about 6 months. The vol. XIII is the 1946 year book and when it appears about Dec. 1946, the Society will have caught up in its schedule.

Please note: I have received the information that Vol. XI is a much larger number and that its price after publication will be \$4.50. I can only accept orders for it at \$2.50 until March 1st. After that date your membership fee of \$2.50 will entitle you to Vol. XII to be published about mid-summer.

Back numbers. Vols. 6 to 10 incl. \$3.50 ea.

A limited number of sets, Vols. 1 to 10 inclusive for \$32.50 per set.

Agapanthus. The name means Love Flower. Blooms in late spring and summer. Large, most attractive flower umbels on tall, erect stems. Universal favorites in south and easily grown in north in tubs or buckets, wintered in basement. Full sun. Delivery any time, except the deciduous *Mooreanus minor* and *pendulus*, which are delivered fall to spring.

Agapanthus Africanus, var. **Mooreanus minor.** A dwarf form especially suited to pot culture. Lovely blue umbels on 18" stem. Likes good garden loam, partial shade. Deciduous, but should not be entirely dry over winter. They look nicer in groups of at least three plants. Give a sufficiently large pot to accommodate the large roots. That will be about an 8" pot for a group of 3 or 4. 50c ea. (5" pot.) 3 for \$1.25. 4 for \$1.60.

A. longispathus. New species. Flowers resemble *Orientalis* but blooms more profusely and is more graceful. 75c ea. 3 for \$2.00.

A. orientalis (umbellatus). **Blue Lily of the Nile.** Our variety is an especially fine one with deep blue flowers on a tall stem. Many flowers are produced in spring and thru summer. 50c ea. Extra large roots, 75c.

A. orientalis, "Sky Blue." Lovely light blue. \$1.00 ea.

A. orientalis, var. albidus. Has pure white flowers. \$1.50 ea.

A. pendulus. Entirely new and distinctly different species of greatest value. Flowers in shades of blue and purple in a great variety. Flowers long, tubular and pendulous. The umbel is smaller but most graceful. Like "*mooreanus minor*" it is deciduous and must be ordered before April 1. In the north it can be grown in garden and dug and stored in dry soil over winter. \$1.50 ea.

Amarcrinum Howardii. A cross between *Brunsvigia rosea* (*Amaryllis belladonna*) and *Crinum moorei*. Flowers are a pure pink and very attractive. As it is a winter bloomer and profuse it is a valuable bulb for a large pot. Moved in the spring, it will bloom the following winter. \$2.50.

Amaryllis. Under this genus we are listing all species and hybrids formerly listed under *Hippeastrums*. *Amaryllis* is the old-time and popular name. They are probably the most popular of all bulbs for growing in pots and equally valuable for southern gardens. They are hardy thruout the south along the Atlantic coast to N. Carolina and even up into Oklahoma they can be grown outdoors in well drained soil, planted about 4" deep and mulched with straw, leaves or brush over winter.

How to Grow Amaryllis in Pots. When bulbs are received, pot at once. Have pots and soil ready to receive them. Do not remove or injure any living roots that are attached. Moisten these roots and dip or sprinkle with Rootone. If there are no living roots, moisten base of bulb after cleaning and apply Rootone. Rootone is not essential but it helps the development of new roots.

A bulb under 3" diam. needs a 7" pot. Larger bulbs should have an 8" pot or larger.

The best potting soil is a friable loam. To this add an equal volume of a mixture composed of equal parts of sand, well rotted cow manure and rotted leaf mould. Use no peat. Bone meal is recommended, 1 tablespoonful to each pot. Mix all thoroly.

Pot the bulb with neck and upper bulb surface exposed. Water well but after that keep the soil only slightly moist until growth starts, then gradually increase. When first potted set the bulbs in a cool, light room. The best temperature now is 45° to 50°. Later the pots may be removed to a room of about 60° to 70° which will force more rapid growth and earlier flowers and this is all right when the bulb is well rooted. Buds will usually have shown.

After flowering, the bulbs will then be shrunken and perhaps soft. A period of growth is necessary to fill them out and increase their size. If good growth is made at this important stage the bulb will be much larger than in the preceding year and offsets may be made. It is necessary to keep them growing as long as possible. When the weather is warm outside the pots may be plunged in the garden or the bulbs with entire, unbroken clumps of roots and earth may be removed from pot and reset. Bulbs may be planted in full sun, but slight shade is good where very hot summers prevail. When bulbs are well established give liberal mulchings of dairy manure. Use stable manure carefully. It is good but very strong. If it does not rain every week give a good irrigation. Before heavy frost, remove to house. Allow them a rest of several weeks but do not allow pots to dry out completely. The temperature of 45° checks growth. When you want them to start, bring to 60° and water a little. You can become expert in obtaining flowers every year.

In the garden, plant *Amaryllis* just under the soil surface.

I am frequently asked why the inquirer's bulbs do not flower. Perhaps they have flowered the first year after their purchase but not thereafter. Some state their bulbs

become smaller each year. These results inevitably follow poor culture. If you give them correct culture, plenty of water and liquid manure when growing well after flowering and keep the growth luxuriant for about 6 mo. or more (as long as they will grow) you will have nice fat bulbs, with a bud or buds formed within for the following season. Don't check their growth. Leave that to the bulbs.

When leaves naturally begin to yellow it is a signal that they would like to rest awhile. Some bulbs will continue to have green foliage but one should reduce water to give an early winter rest. Well established bulbs can often be brought into flower in January or even by Christmas. But they should have had a few weeks rest preceding that.

How to judge the quality of the flowers of *Amaryllis* hybrids. The perfect flower of the Leopoldi type should be at least 5" to 8" across. The petals should be well rounded and broad, overlapping each other, no twisting of petals, and they should form a wide open, flat flower. The texture should be smooth and firm, of good substance. The tube should be short. There should be little or no green in throat but as the species Leopoldi contains considerable green there are few hybrids that do not contain some green. Very few are perfect in any respect.

There should be no dull colors, like brick red. But colors should be bright and of every imaginable tone within the range of this species.

Self colors are desirable to go along with stripes and other variations. But it is difficult to get other than red selfs and these are unusual. A few of our Select Strains are pure red, scarlet rose or pink selfs. But they are few and not separately labeled. Don't order self colors or any colors except as listed. When you are lucky enough to draw a self color you may congratulate yourself that you received a bargain worth 3 to 10 times its cost.

Pure Whites are very rare. They are very expensive and are difficult to grow. Be satisfied to have White Backgrounds. They are much easier to grow, better bloomers and cost less. The general effect is that of a white flower.

Please note. A few of the varieties and colors listed in our fall catalog are sold out for the present.

AMARYLLIS SPECIES AND HYBRIDS

***Amaryllis advena*. Oxblood Lily.** This species blooms in the fall, Aug. to Oct. There are 5 to 7 or more flowers in an umbel on a 10" slender scape preceding the foliage. There are two color types, dark oxblood red and light red with a lavender tone.

It is not suitable for pot culture but is so nearly hardy that it is grown commercially even in the milder section of Mich. where peaches are grown. In So. Calif. the foliage grows all winter but probably in Mich. it appears in earliest spring. It is recommended for trial in the milder sections from N. J. and from just above the Ohio river, Central Missouri and Kansas to the south.

Culture. Full sun exposure. It does well in very heavy soils or medium loam. As it likes deep planting, it is advisable, especially in the north, to plant 6" deep or more in order to escape freezing. Plant in a protected situation, in colder sections, south of a building, wall or tree and mulch. **Delivery** as soon as dormant about July. Plant as soon as received and begin watering in late July.

Oxblood Red or Light Red. Either color, 60c ea. Assorted colors, 45c ea.

A. hybrids. Select Strains. These are the Leopoldi type, selected from the very best American strains.

Most *Amaryllis* that are sold are chance seedlings. In Florida and California there are many who grow acres of bulbs. The seed is collected in the field and no selection of parents is possible. The strongest growers, not the most beautiful, produce the most seed.

Judged from the standpoint of a turnip, these seedlings are likely to produce the most beautiful, vigorous and largest bulbs. From the vegetative functions of prolific seed bearing, rapid, vigorous growth and increase they can be sold the cheapest. Dime

stores often sell them for 25c. Many very well known and honorable firms handle this grade of Amaryllis. They please many customers. The "beautiful bulbs" will range in price from 35c to 75c each.

Altho these bulbs will produce flowers that please the average inexperienced amateur they are not truly representative of the advancement made in the quality of Amaryllis flowers. To appreciate fully the quality of any flower, one needs experience, study and the best examples for comparison.

Our **Select Strains**, in contrast with the average amaryllis, are seedlings of selected parents. The parents are not judged as vegetables (nature's process in a large measure) but for the beauty and perfection of their flowers. These parent bulbs are of a quality that would command a price of from \$5.00 to \$25.00 or more per bulb. The parents are grown in greenhouses which exclude insects and the possibility of nature's way of crossing. They are all hand pollinated and study is given to the proper mating of the parents.

The **Color classes** are founded upon the color of the seed parent. Not all come true to this color and these are rogued out at the first blooming. But often a few rogues, or off-colors, escape. Thus our classification is not a perfect one and some off-colors will be found. It is best to buy 3 or more of a color in order to get the nearest to your ideal. But every bulb will give a good flower and be worth the price paid. A reasonable percentage of the bulbs will give very superior flowers and these bulbs may be worth from double to several times their cost.

Personally, I have grown Amaryllis continuously since 1898, first as a hobby and later as a business. I have imported bulbs and seeds from the best specialists in England and Holland and made selections from Burbank's originations after a very close study of them all. I am a little hard to please in Amaryllis, but I consider our Select Strains worthy of their name.

This spring we can offer Select Strains in the following color classes and sizes.

No dozen or 100 rates on Amaryllis except as listed.

A. Select Strains, Assorted Colors. 2½" diam., up 85c ea. Three for \$2.40. \$9.50 per doz.

A. Select Strains, White Backgrounds. These are white with light markings of pink, rose or red. The markings are seldom heavy and the effect is that of a white flower. From these the near white and pure white are developed. 85c ea. 3 for \$2.40.

A. Select Strains. Crimson. A fine red shade and a few are self colors. But these are not separately identified. 90c ea. 3 for \$2.60.

A. Select Strains. Scarlet. A lighter red produced by a mixture of red and yellow pigments. \$1.00 ea. 3 for \$2.75.

A. Select Strains. Salmon. \$1.00 ea. Straight price.



SELECT STRAINS HIPPEASTRUM

A. Select Strains. Extra large. Assorted Colors. Bulbs from nearly 3" to 3¼" \$2.50 ea. 3¼" to over 3½" diam. \$3.00 ea. For 50c more I will try to find specified colors such as Red, Scarlet, Rose, White Backgrounds, etc. If out I will notify you.

A. American hybrids. Small bulbs 35c ea. M. 50c. Large bulbs, nearly 3" and up 75c ea.

A. Rutila Hybrids. For landscape use, in the garden, to produce a splash of vivid color, these rival the *A. Johnsonii*. The following qualities recommend them for this use. They are most vigorous in growth, producing immense bulbs and multiplying very rapidly. They are nearly all one variety and color, but with a few that are closely similar. This color is scarlet-red, most striking in a green background. They are very free blooming, with a heavy crop of flowers in spring, now and then a few all summer and quite a few in the fall. We had flowers in Dec. They should be hardy farther north than our Select Strains but not where temperatures go below zero. They are not Leopoldi types and on a close up view do not have the individual perfection required for growing in pots tho many will like them thus. Large bulbs 75c. Jumbos \$1.50.

A. Diener's Posthumous Hybrids. These are Diener's latest hybrids. They are Equestre type, quite different from the Leopoldi type. Many umbels have 5 to 8 flowers. In order to produce the large flowers claimed by Diener and often exhibited by him it appears that the scapes must be disbudded leaving only two flowers. Assorted Colors. \$2.50 ea.

A. Johnsonii. The first *Amaryllis* hybrid, now distributed all over the world. Dark red with contrasting broad white band thru center of petals. One of the hardiest, easiest to grow and most rapid in increase. 50c and 65c ea.

Amaryllis Seed. We are unable to produce enough seed for our own planting. It is far better anyway for you to grow you own seed as that which you buy is often too old. *Amaryllis* seed should be planted shortly after ripening and drying. One year old seed is unlikely to grow in a good percentage.

Plant Breeding is an interesting science and art. Undertaken as a hobby, it has often resulted in fame. It will involve and develop great skill, ideals of beauty, good taste and intelligence. I suggest you start with our Select Strains. Get a dozen or more bulbs and cross only those you like the best. Cross pollination is easily accomplished by placing the powdery pollen borne by the six stamens on the stigma in the center. The stigma when ready for pollen will be opened into three parts. When the seed pod is ripe it bursts open and may be removed and dried. Plant the seed (soon) in a fine sandy loam containing plenty of humus. Do not use peat. Cover seed about ½". Seedlings may be grown in pots in house or greenhouse where they will continue to grow all year without a dormant interval until they flower; usually this requires 2 to 3 years. In the warm south they can be grown outside under the half shade of lath. But frost usually destroys foliage in winter and cool nights interrupt growth.

Brunsvigia rosea. Synonyms, *Amaryllis belladonna*, *Callicore rosea*. This bulb is familiar in Calif. and many parts of the south as *Amaryllis belladonna*, Naked Lady Lily, etc. I hope you can adjust yourself to this new name the botanists have decided on. There is sufficient evidence that the bulb is really a *Brunsvigia* and certainly it is incorrect to call it *Amaryllis*.

These begin to flower often in late July. The variety **Major** is in full flower in Aug. **Minor** follows soon after. The umbels are many flowered and the flowers are of the most exquisite pink and most entrancing fragrance. They are not suitable for pot growing, as in pots they flower only the first year. But that flower is well worth the cost of the bulb.

It is hardy where winter temperatures go as low as 10° or 12° above zero. That limits its culture to the south, and along the coasts to N. Carolina and the state of Washington.

Time of Delivery. These are usually ordered in the fall. As the result of such late planting they do not always flower the first year. If they do flower, they do not

have a sufficiently long season in which to form new roots and flower the second year. It is better to order before June 1. Thus we will deliver in June or July. If you plant as soon as received there is not likely to be an interruption in the production of flowers.

Culture. Work the ground to a depth of 10". Plant with top of bulb covered about 2". In dry climates, begin to water in late July and continue until foliage dies the following June. Full sun or slight shade. They prefer to be dry when dormant.

Brunsvigia rosea, major. Pure pink 40c. L. 60c ea. Jumbo 80c.

B. rosea, minor. Later to flower. Pink with lighter throat. 65c.

Chlidanthus fragrans. Golden yellow flowers in spring. Entrancing, spicy fragrance. Three or four flowers in an umbel on a 10" scape. Plant 3" deep, in full sun. They like to be crowded whether in garden or pots and when bulbs fail to flower freely it is often because the bulbs' entire energy is spent in vegetative increase. Remedy, don't divide clumps. Let them become crowded or pot bound.

Altho cheap, this is one of the most desirable bulbs for southern gardens. In the north it can only be grown in pots. It should be potted as soon as received but start it into growth slowly. 25c ea. \$2.00 per doz. Planting stock, small bulbs, some of which may flower, 50 for \$3.50. 100 for \$6.00 postpaid. Gardeners in the south should order these.

Clivia. It has evergreen, strap shaped leaves that resemble those of an Amaryllis. Unlike an Amaryllis, no distinct bulb is formed, but the rootstock which develops beneath an old Amaryllis bulb and which may be trimmed off with advantage to it, is greatly lengthened in a Clivia and is of much value to it. In trimming this back when resetting Clivias do not remove active roots.

The flowers are produced in umbels of 10 to 25, in rich and exquisite tones of orange, in Feb. to April. When not in flower the deep rich green foliage and later the red fruits are most ornamental.

Culture. They are usually grown in pots, even in the south, as more perfect foliage is thus possible, and when in flower one wants them in the house. We grow them in a lath house, lath spaced $\frac{1}{2}$ " apart and in garden under Avocado (evergreen) trees. They must have shade with only a few flecks of sunshine, but plenty of light and air.

Clivias must never be dried off or allowed to lose their foliage. Keep them well supplied with water after flowering, all summer and fall. Liquid fertilizer, occasionally, helps. When growth ceases in late fall rest them by giving them less water. But keep moist enough to prevent wilting of foliage. At this time they should have a cool room with temperature of about 40° to 50°. Pots should be 8" for a small plant up to 12" for larger. Drainage must be perfect.



**CLIVIA, RECENTLY RECEIVED,
BUDDED PLANT**

Potting soil is described under "General Culture Directions." pH 7 is about right.

Clivias usually flower the first year after moving but not always. The only certain way to get a flower this year is to pay the extra cost of budded plants. Since budded plants require more careful packing and cost more postage we must add this cost to our price.

We regret that lack of labor has made it impossible to control snails perfectly in our Clivias. The foliage is not so perfect as in pot grown plants. But the imperfect foliage will be soon replaced in pots when given good culture, especially if fed with liquid manure when fully established and growth has started.

Lack of labor has also resulted in a reduction in the size of our stock. We have been unable to raise seedlings and offset plants. Our special prices have been low in comparison with other plants of equal quality. The prices in this catalog are a little more than last fall's but they are still very reasonable.

Clivia miniata. Wide open flowers of soft yellow orange. Usually earliest to flower, Jan. to Mar. Hardest and easiest to grow. Good blooming sized plants, \$2.50. Budded plants will be sent as soon as ready for \$3.25.

C. miniata hybrids. Similar to the species "miniata" in foliage, hardness, wide open flowers, etc., but there is some variation in color and form of flower. Most of them are in light orange tones. A few are dark and a few have a white throat. Do not express your color preference for any Clivia hybrids as we cannot tell the color from the plant. Blooming size plants \$4.00. With bud, \$5.00. Larger plants, \$5.00. Budded, \$6.00.

Cooperia pedunculata. Texas Rain Lily. Close to Zephyranthes but larger. Lovely white flowers appearing after rains in summer. Hardy except in far north. In central sections it may be planted to 6" deep for frost protection. It may be dug and stored over winter in north. 25c. \$2.50 per doz.

Crinums. Species of this large genus are native to every continent. They are most attractive plants for their foliage alone and with their fragrant, lovely flowers they are indispensable in southern gardens, for the landscape effect among shrubs and trees. The flowers are useful for cutting and many florists use them.

The **landscape value** of Crinums, Hemerocallis and the true Liliums (such as Regale and the Sunset Lily), L. pardalinum giganteum, is a fact to be thankful for. In a border among low shrubs this combination has every advantage of beauty. The bulbs may remain in one place, undisturbed for many years and maintenance costs are low. By keeping a fine mulch of thoroly decayed manure and leaf mould on the surface, tillage is almost or quite unnecessary. Weeds can be soon eliminated.

Hardiness. Only the Crinum longifolium is hardy in the north. Crinum Cecil Houdyshel and Powellii alba are hardy as far north as Va., Ky., Tenn., So. Mo. and So. Kans. or anywhere that temperatures seldom go much below zero and then only for a short time. On the border line, plant bulbs with base at least 8" or 10" deep, preferably in a protected situation and well mulched over winter.

Culture, in addition to the information above we add that Crinums may be planted in the south with base of bulb only a few inches under soil surface or bulb entirely covered but neck of bulb above surface. The best soil is a deep rich loam. Ours is heavy and they do very well. Crinums are heavy feeders. Soil should contain much humus and manure can be applied 2 or 3 times a year as a mulch when bulbs are established. Give only light applications of fresh manure. Give plenty water. See them grow, flower, raise a family.

C. campanulatum. Belongs to the "Milk and Wine Lily" type. That is, the flowers are white with a bright rose stripe thru center. \$1.00.

C. Cecil Houdyshel. Flowers, deep rose pink. One of the best hybrids, all qualities considered. It is the same cross as C. Powellii but is much larger, more robust and instead of flowering in but a limited period it is almost a perpetual bloomer. Large bulbs often produce 7 or more flower scapes in a year, the most profuse of all. Blooming size, \$2.00. Jumbo bulbs, \$3.50.

C. Ellen Bousanquet. Most outstanding. It is most surprising to see a *Crinum* with such dark, glowing wine red flowers. Very vigorous and easy. Jumbo \$1.50. Large \$1.00. Medium 60c.

C. erubescens. "Milk and Wine" type. The center stripe is red-purple. 50c ea. Jumbo \$1.00.

C. H. J. Elwes. Pink flowers of unusual beauty. \$4.00.

C. kirkii. One of the most desirable of "Milk and Wine" type. White flowers with red center stripe. The large umbels have many flowers open at one time. 75c ea. Per doz. \$7.00. Jumbo bulbs \$1.25.

C. longifolia alba. (Syn. *Capense alba*.) White lily-shaped flowers. This is the hardiest species, surviving the winters with protection if planted deep, as far north as Ohio. Better than "rosea." 50c.

C. longifolia rosea. Pink flowered form. 60c.

C. Louis Bousanquet. Very free flowering thru an unusually long season. Pink flowers on a very tall, erect scape. \$1.00.

C. moorei. Large pink, bell-shaped flowers in the fall, freely produced. The long neck of the bulb surmounted by rotated leaves give the plant great decorative value. Requires shade. Nearly as hardy as *longifolia*. Jumbo bulbs \$1.00.

C. powelli alba. Extra fine pure white. One of the most valuable and beautiful *Crinums*. 50c ea. Jumbo \$1.00 ea.

Elisena longipetala. Very rare and lovely Peruvian amaryllid. It is related to the *Ismene* but the pure white flowers are far more delicate and graceful. Culture like *Ismene*. It can be forced in pots or grown in the garden in summer. Bulbs stored over winter like Glads. It is hardy in the middle south. This fine, rare bulb should be in every collection of unusual bulbs and we offer at the reduced price of \$3.00 ea. this spring.

Habranthus. This was formerly considered a sub genus of *Hippeastrum*, but upon changing the generic name from *Hippeastrum* back to the original *Amaryllis*, botanists have wisely given the *Habranthus* their proper generic standing. They usually have a one flowered umbel.

Culture is much the same as for *Amaryllis*. Most of them are hardier and probably all could be grown in pots. Some are winter growers, others are summer growers, still others are evergreen.

Habranthus andersonianus. Deep yellow flower, bronze on reverse, in the fall before foliage appears. Winter growing. Small bulb and plant, with flower about 1½" across on top of a 10" scape. About as hardy as *Brunsvigia rosea* and as far north as Okla. Delivery when dormant in summer. 50c.

H. brachyandrus. Long tubular flower like *H. robustus* but much larger and deeper, more richly colored, shades to a deep purple in throat. Not winter hardy except in far south. Delivery any time but early spring is best. \$1.00. Largest \$1.50.

H. robustus. Properly named. A robust grower. Like *H. brachyandrus* but flowers are a lovely tone of lilac pink and it is more hardy, nearly evergreen, more profuse in growth. Seeds itself freely. 35c ea.

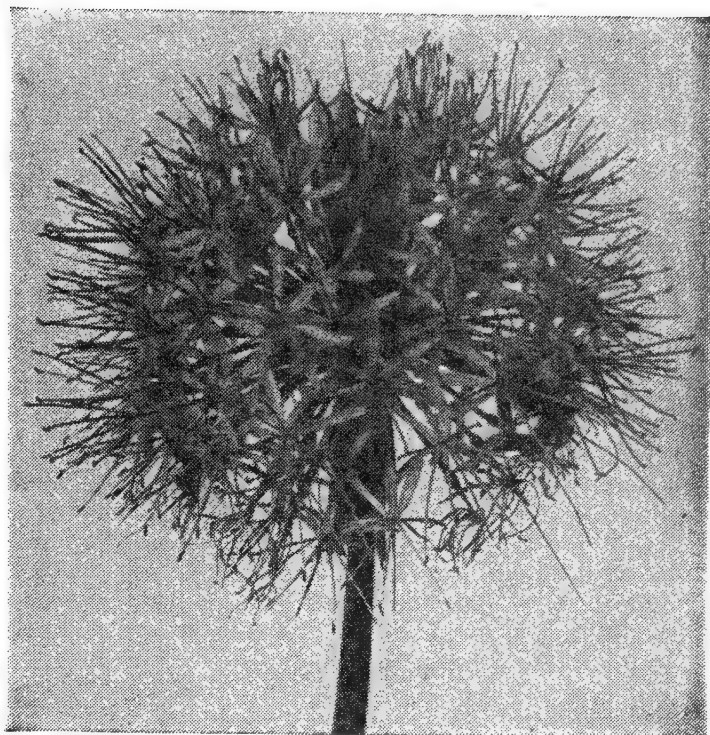
Haemanthus. This south African genus is very rare in cultivation. Very few have ever seen one. They are hardy only in an almost frost-free climate like So. Calif. or Florida. In their habitat, the following grow in cool, moist forest glades where there is little sun but plenty of light and where light breezes keep the air in motion.

Culture. They should be grown in pots except in climates like Florida and So. Calif. The soil should be equal parts of loam, coarse sand and peat or leaf mould made thoroly fine. Drainage should be perfect. A tablespoonful of bone meal to each pot is useful. The species listed here require cool shade, little sun, but light. An abundance of water at all times when growing is required but rather on dry side during late winter dormancy. But not too dry. When bulbs are received pot at once and water. Do not water much before growth starts. Altho a little warmth favors earlier growth and flowers it may be easily overdone.

Haemanthus Katherinae. The bright red flowers fill a large rounded umbel often 10" or more in diameter. I have counted nearly 125 in an umbel, the broad banana-like foliage droops gracefully into an umbrella form. Scarlet seeds follow the flowers. A plant in flower is an unforgettable sight of tropic beauty. The entire plant is of quite large proportions, the foliage and flower umbel reaching a height of 30" to 36". Introduced from Natal in 1877 they are yet very rare. Give them a 14" to 16" pot or tub.

Katherinae is almost evergreen but usually tops either die or decline in Jan. We can move them between Jan. to Mar. but if wanted you should order at once.

We have only a few good blooming size bulbs. Price \$10.00 ea. There are a dozen or less of a larger size at \$12.50 ea.



HAEMANTHUS KATHERINAE

H. carneus. As the name indicates the flowers are flesh color. This plant is odd and rather attractive but for decorative value the price should be much less than an Amaryllis. We offer a few, only for collectors. The two large leaves lie flat on ground. The small umbel of flowers appears in early fall, followed by foliage which grows until spring. Delivery about June. \$4.00 ea.

H. Multiflorus. Not exactly a smaller edition of Katherinae but smaller and much like it. The umbel is nearly as large, composed of 60-100 blood red flowers. It is said that plants in bloom have sold for \$25.00 in flower shops. The bulbs have a little longer dormant period but should be ordered early, not later than March, usually. Give them a 10" to 12" pot. Blooming size, \$3.00. Larger bulbs for \$4.00. Larger size is more sure to flower, and the flower umbel is larger.

H. puniceus, sold out for the present. **H. Coccineus**, see Fall Catalog.

Hemerocallis. Daylily. The flowers range in color from dark bronzy red, thru pastel tones of pink to orange and yellow. They are borne on a branching scape well above the foliage.

The Greek name, meaning "beautiful for a day," refers to an individual flower. But these are so freely produced, thru a long period, that "beautiful every day" would be more apt, as a collection of several sorts show masses of flowers thruout the spring, summer and fall and here we often have some winter flowers. The modern sobriquet of "The Perennial Supreme" is well deserved.

Culture. While their beauty is their greatest recommendation, their easy culture and hardiness adds to their desirability. I have known abandoned plants here, where we have arid, hot summer, to persist for years. But that must not be their fate. They grow well in full sun. Slight shade is better. If given constant moisture about their roots, preserving this and coolness of the earth with a good mulch, the plants are ideally situated and respond with generosity. They are hardy even in severe winters in the north. They are fibrous rooted, not bulbs, and must be planted at once when received. Altho they can be moved any time, it is better to ship from late fall to early spring.

They should be used more extensively in permanent borders and landscapes. Plant them along with Crinums and shrubs. Both Crinums and Daylilies are as permanent as the shrubs and seldom need thinning. Both can use top dressing of manure.

In Daylilies, the sepals are colored and petal-like and are an essential part of the floral display. Approximate flowering dates are given.

Hemerocallis Araby. Bronze on gold dust in pastel tone. \$4.00.

H. Calypso. Large, fragrant lemon yellow flowers. Open in evening. 42". June-Aug. 30c ea. \$3.00 per doz.

H. Chengtu. Brilliant coppery orange-red with carmine mid-zone. 3 ft. July to Sept. \$1.50.

H. Cinnabar. Cinnamon sprinkled over orange. Strongly gold-glistening. 30". July-Aug. 60c.

H. Crown Prince. Color like Mikado. 30". June-Aug. 25c ea. Per doz. \$2.00.

H. Dauntless. Cadmium yellow. Fulvous red, blended in mid-zone. Pastel effect. 30". June-Aug. \$1.25.

H. Florham. Still popular old hybrid. Large, golden yellow. May-July. 50c.

H. Florida. Pastel shades. Light chrome yellow with rose blush. Darker mid-zone. \$2.50.

H. Fragrance. A fine deep yellow. Fragrant. \$1.50.

H. Kwanso. The Double Orange Daylily. 20c ea. 3 for 50c.

H. Linda. Petals, ruffled golden yellow, flecked with cinnamon with rose-zone. \$1.50.

H. Margaret Perry. Brilliant orange-scarlet. 4 ft. July-Aug. 35c.

H. Mikado. Orange with mahogany-red zone. A favorite. 3 ft. May-July. 50c.

H. Nubiana. Dark chocolate-red with yellow stripe in petals. One of the darkest varieties. 2 ft. \$4.00.

H. Patricia. Pale yellow. Large fragrant flowers. 30". July-Aug. \$2.00.

H. Radiant. Rich orange. 42". June-July. 50c.

H. Rajah. Deep English red with darker red veins. Garnet red eye-zone. 40". July-Aug. \$3.00.

H. Rosita. Near carmine-crimson with coppery red tone. 36". Part shade preferred. \$3.00.

H. Serenade. Rose-fulvous markings on apricot cream. Faintly overcast darker. 4 ft. June-July. \$2.00.

H. Sibyl. Dark purple-red petals, lighter sepals. \$3.50.

H. Soudan. Lemon yellow. Broad wavy petals and sepals. 3 ft. June-July. 50c

H. Vesta. Deep orange with glistening gold sheen. 30". May-July. \$1.00.

H. Vulcan. Dark maroon-red. 30". July-Aug. \$2.25.

Hymenocallis. Spider Lilies. The true Spider Lilies are pure white with long narrow petals and long stamens giving a spidery appearance. The so called Red Spider Lily and Golden Spider Lily are *Lycoris*. **Culture.** They are hardy in the south and may be planted deep on the border-line as in N. Car., Okla., etc. They do well in pots. In the north they may be grown in pots and shifted to garden with arrival of warm weather or they may be dug in fall and stored like *Ismene* and *Glads*.

Hymenocallis sp. Tropical Spider Lily. This appears to be the same as *H. rotata* and *H. tenuiflora* and these two appear to be one species. This is a large species, with pure snow-white flowers over 7" wide. It is evergreen in frostless locations. 50c ea.

H. Harrisii (Harrisiana). A small, deciduous Spider Lily. Flower stem not over 12" tall. Hardy as far north as Washington, D. C. Rare. \$2.50.

Ismene. These are closely related to *Hymenocallis* and were usually classified under that genus until recently. Most botanists now give the *Ismenes* generic standing.

Culture. They can be grown anywhere in the U. S. or where *Glads* can be grown, in the garden. In the colder sections of the north, dig the bulbs in the fall and store like *Glads*. In the middle south, plant 6" deep and mulch well over winter. In the deep south they are quite hardy.

It is very important to store *Ismene* in a warm room. The storage temperature of 55° is safe and 70° is still better. Chilling may cause flower buds to blast or the bulbs to rot. I have found no advantage in leaving old roots attached.

Ismene calathina. Peruvian Daffodil. Large white, very fragrant flowers, tinted green. As in *Hymenocallis*, the stamens are joined by a membrane to form a cup. This is a much larger cup in *Ismene* and bears a resemblance to the daffodil's cup. 35c. \$3.50 doz.

I. calathina, var. Advance. An improved form with larger bulbs, larger and whiter flowers on a taller scape. \$1.00.

I. calathina, var. festalis. An *Ismene-Elisena* cross of great beauty. Pure white and very graceful. \$2.75.

I. calathina, var. festalis Triumph. Improved "festalis." \$2.00.

I. calathina, var. Olympia. The largest *Ismene*. Cream to light yellow. \$3.25.

I. calathina, var. Sulphur Queen. A cross of *I. calathina* and *I. amancaes*. Sulphur yellow, very deep when it first opens. \$1.25.

I. macleana. Our smallest *Ismene*. The bulb and plant are a little smaller than *I. calathina* and produce several slender 12" scapes with diminutive *Ismene* flowers that are nice in arrangements. Rare. Special price, 25c ea.

Leucojum aestivum. Snowflake. This species is much better than "vernum." Hardy in north. Blooms very early, often before snow is gone. Dainty white, pendulous bells, each petal tipped with green dot. Plant 4"-6" deep. 10c ea. 75c doz. Delivery in summer when dormant.

Lycoris. Fall blooming amaryllids of highest garden value but not suitable for pot culture. In pots, they flower the first year but not thereafter. *L. squamigera* (or *Amaryllis Halli*) and *L. purpurea* are perfectly hardy in the north. *L. radiata* is hardy as far north as Tenn.

Delivery of *Lycoris* in summer.

Lycoris purpurea. The brilliant blue and purple markings on the flower make a startling effect. \$3.00 ea.

L. radiata. Red Spider Lily. One of the south's most outstanding garden bulbs. The flowers, appearing in Sept., are bright coral red. 35c ea. \$3.00 per doz.

L. squamigera. Amaryllis Halli. The hardy amaryllis that grows so well in the north. The general appearance is much like *Brunsvigia rosea* (*Amaryllis belladonna*) except that the flowers are lilac pink. \$1.00 ea.

Nerine. This genus is seldom seen in America, altho it is one of the most beautiful and varied of the Amaryllids. They bloom in succession from Aug. 1 thru Jan. They are hardy only in the south where temperatures seldom go under 26°. But they are one of the finest pot bulbs. **Culture:** Pot or plant in mildly acid to neutral soil. Sandy soils are more likely to be acid and drainage is better. Use peat or leaf mould to bring soil to pH 6.5 or 7. Alkaline soil is the most frequent cause of failure. Pot bulbs at once with bulb well covered and 2" to 4" deep in gardens. Full sun. When foliage yellows withhold water but be sure they have made a vigorous growth.

Nerine Bowdenii. 10 or more flowers in an umbel 9" wide on a 15" scape. The finest of all and of easy culture. Delivery Jan. to July, sometimes later. \$1.00 and \$1.50 ea.

N. Bowdenii, Pink Beauty. Larger and finer. Late spring delivery. \$5.00 ea.

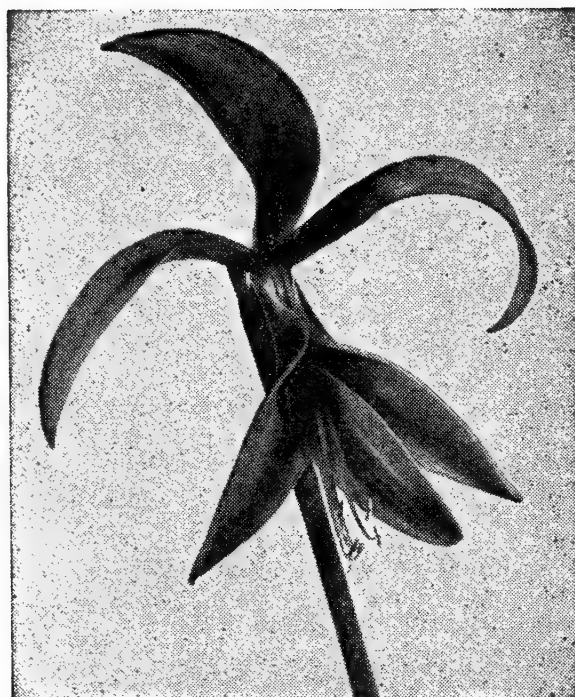
N. filifolia. Lovely small *Nerine* with evergreen thread like foliage. Carmine pink flowers on 12" stem. A dozen bulbs may go into a 6" pot. Bloom in Sept. Delivery, any time. 15c ea. \$1.00 doz.

N. massonorum. Earliest, often mid-July. Foliage like *N. filifolia*. Flowers resemble it but smaller, on a shorter scape. Very long spathe. Delivery any time. 50c ea.

N. rosea-crispa. Hybrid of *Filifolia* but larger in all parts. Can be kept evergreen or dried off. \$1.00.

N. undulata. Rose pink. Petals with crisped edges. Summer delivery. \$2.00.

The flowers of the last two are much alike and so much like certain other species too that if you can't tell them apart don't accuse us of error.



SPREKELIA FORMOSISSIMA

garlic odor if bruised. An acquisition

Zephyranthes. Fairy Lilies. The smallest Amaryllid, 6"-12" tall. Fine in beds or borders. Hardy in middle south. In north dig and store. They may be grown in pots. Give acid soil, sandy loam with leaf mould.

Zephyranthes candida. Often called white Crocus. Best pure white. Evergreen. Very easy. Flowers profusely, making a bed with a snow white coverlet from mid-summer to early winter. Special. 3 for 10c. 40c per doz. 100 bulbs for \$2.00. 500 bulbs for \$7.50. 1000 for \$12.50. Can be moved any time.

Z. grandiflora. (Carinata). Fine large, pink flower. Largest Zephyranthes. 25c ea.

The Alliae. This group is now placed in the Amaryllis family. Sandy loam is preferred. Do not add too much leaf mould and no peat as very acid soil is not so good. Plant about 2½" deep. The species Allium are onions and should be grown in full sun unless noted.

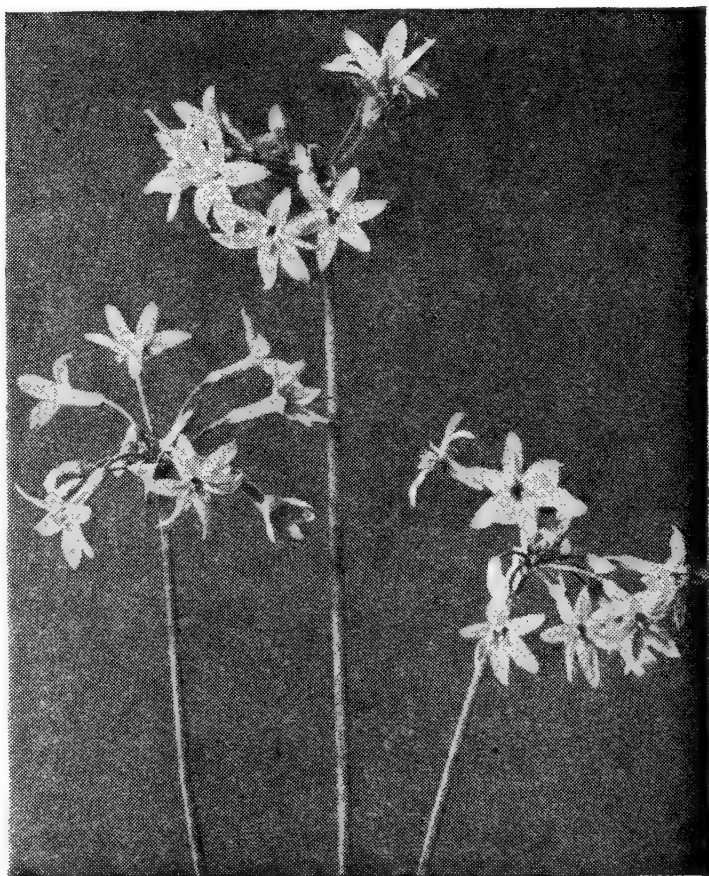
Allium Schoenoprasum. True Chives. Lovely little plants with lavender flowers, used for edgings in the flower or herb garden and add zest to salads, stews, etc. 10c ea. 4 for 25c.

Pancratium maritimum. Very fragrant pure white flowers in shape like an Ismene. Bloom late summer to fall. **Culture.** Plant 4" deep in a sandy soil. Hardy in middle south. Not recommended for pots. 25c ea.

Sprekelia formosissima superba. The Orchid Amaryllis. Dark crimson flowers in orchid-like form. Twice as large as the common type, better color more floriferous. We have flowers in the field all the year but heavier crop in spring. A fine bulb for pots. **Culture** like Amaryllis except one can keep it growing all winter. Evergreen foliage. Jumbo bulbs 75c. Large 50c ea.

Sternbergia lutea. A winter growing, bright yellow Amaryllid often called "Fall Crocus." Most desirable. Hardy in middle south. **Culture.** Plant 3" deep. It should be moved as soon as dormant in late spring or early summer as they usually flower too early in the fall for fall planting. 50c. Summer delivery.

Tulbaghia violaceae. Small cousin to Agapanthus. Mauve flowers produced thruout the year, a true perpetual bloomer. Foliage has for pot culture. 35c. 3 (for a 5" pot), \$1.00.



TULBAGHIA VIOLACEAE

A. senescens. Erect strap shaped leaves. Deep lilac flowers in a dense globular umbel. Very fine bloomer. 20c ea. 3 for 50c.

A. tuberosum. Oriental garlic. A pretty allium with white flowers. An ornament in the garden, indispensable in the herb garden. Leaves give a most delicious flavor to salads without the long-lasting high-powered after effect of garlic. In north, winter the plants in pots. They would probably grow in pots in the window all winter. Plants 25c per small clump.

IRIS FAMILY—Iridaceae

The Iris is the type plant of this family which includes the Gladiolus and many others that are listed in our fall catalogs.

Tall Bearded Iris. In 1910, I imported from Goos and Koenemann of Breslau, Germany, a complete set of the new Bearded Iris, produced by French and German Breeders. I do not know how many in So. Calif. had preceded me, but I had never seen any except the white and violet or blue sorts and did not know any one else here that had seen them. Since that time, the great improvement in Iris are impossible to realize except by actual comparison of the Iris of Then and Now.

The following list of Bearded Iris includes many of these modern Iris that are now low enough in price for general garden use. We do not have a demand for those priced up to \$25.00 each or even more. Only a few years ago our 15c to 50c Iris sold equally high.

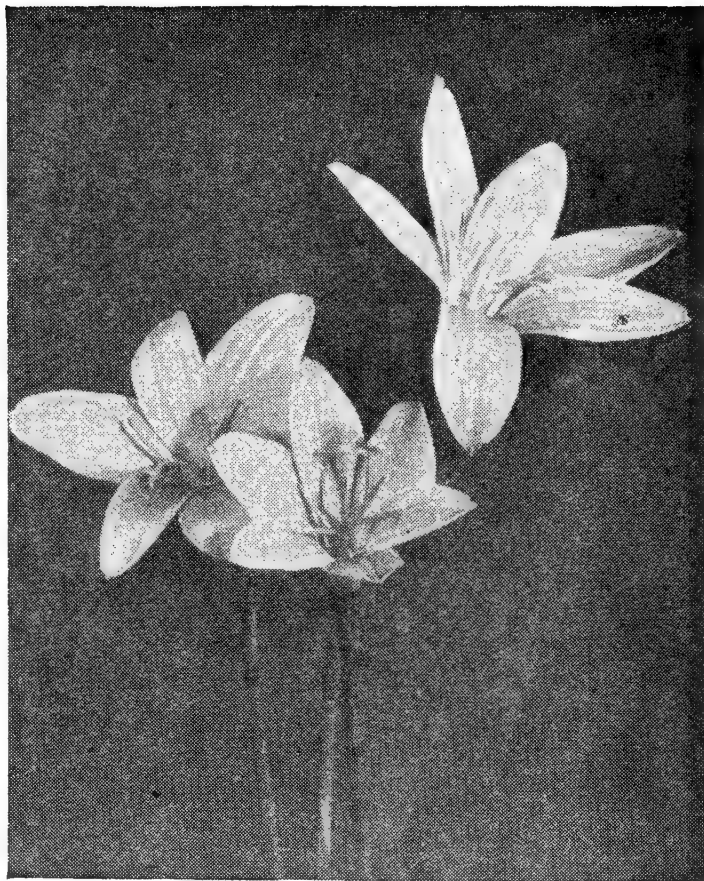
Culture. Iris may be moved at any time of year, when weather permits digging and replanting. The best time is soon after they are thru blooming. That is May-June in this climate. You may order at once and we will send them now or if you so specify we will send them after flowering.

Culture is most easy. Plant with roots spread out and rhizomes barely covered. They may be spaced 1 to 2 ft. apart. Give full sun exposure. They prefer heavy soil but do well in sandy soil. Neutral, pH 7 to mildly alkaline, pH 7.5 is best. They should receive plenty of water until mid-Aug. About that time or a little later let them dry. They need a hot-dry baking period of several weeks in order to flower well the following spring. Lacking this or when too crowded, too much shaded or as a result of poor culture at proper growing period, few flowers may result. Avoid use of manure or other fertilizers.

Definitions. Plicatas have white ground color, often tinted and with deep contrasting color, flushing and bordering this, in fancy "stitching" or in dots and dashes. **Blends** have several colors deliciously blended and iridescent. **Bicolors** have upright petals or standards (S.), and falls (F.) in different tones, the S. lighter. **Variegatas** have S. yellow to bronze and F. in red to maroon.

Alta California. 48". S. deep yellow, perfect in form. 20c.

Ambassadeur. 42". S. red violet; F. purple maroon. Late. 15c.



ZEPHYRANTHES GRANDIFLORA

Arcadia Blue. Pale blue. Blooms profusely early and late spring and in fall. 15c.
Attitash. Variegata. S. yellow, citrine and violet blend. F. violet blend. 20c.
Blue and Gold. Blue. Deep gold beard. 20c.
Blue Beard. Better, deeper blue than parent (Crimson King). Fall bloomer. 25c.
Blue Velvet. 46". Intense, deep velvet blue. 25c.
Boadicea. Yellow and pink blend, flushed sky blue in center of F. 25c.
Buechley Giant. Perfectly formed, massive blue flowers; very tall. 25c.
California Blue. 60". Rich blue violet with glowing orange beard. Long blooming season. Deliciously fragrant. 20c.
California Gold. Tall. Large deep yellow. One of the best. 35c.
Canyon Mists. 40". Pink mauve self colored. Beautiful. 15c.
Cecil Houdyshel. Tall plicata. Ground color white, heavily flushed and feathered lavender. Hardy everywhere. 15c.
China Maid. One of the loveliest new pink irises. Blend of pink, gold bronze and rosy lilac. \$1.00.
Claridad. 30". Best, true-blue iris. 20c.
Coronation. 36". Fine, large, deep golden yellow. 15c.
Cucamonga. Tall velvety blue-violet. Best qualities of Dominion and Mesopotamica. 25c.
Delight. Tall, pink and white plicata. 15c.
Depute Nomblot. The perfect iris. S. copper. 25c.
Desirable. Very striking white and purple. 25c.
Dolly Madison. 36". Large flowers blended mauve and yellow. 20c.
Don Quixote. 42". Large, blended violet and brown. 15c.
Druid. 36". Red maroon and brown. 20c.
Duke of Bedford. 34". Deep red violet. 15c.
El Capitan. 40". Manganese violet. Largest and finest. 20c.
Eleanor Roosevelt. Dark purple. Free fall bloomer. 15c.
Francheville. 54". S. fawn, tinted lilac; F. red purple, edged heliotrope. 25c.
Gaviota. Fine cream white, edged yellow. 15c.
Golden Cataract. Deep golden yellow. Most profuse bloomer of all. Here it ceases only in mid-summer and mid-winter. 50c ea. Three for \$1.00.
Happy Days. Our largest, tallest yellow. Most desirable. 40c.
Indian Chief. Huge, brilliant red tone, perfect form, free flowering. 25c.
King Midas. Bicolor. Blended golden buff and garnet brown. 25c.
Lentz Schnee. White, tinted lavender. 15c.
Los Angeles. Tall, large plicata. Snow white, edged blue. 15c.
Loudoun. 30". Yellow lined and dotted with chestnut. 20c.
Louis Bel. Pansy violet and violet purple. 25c.
Mabel Taft. Giant blue bicolor. 25c.
Mary Barnett. 42". One of the best light blues. 20c.
Mary Gibson. 42". Early. Bronze, blended yellow. 25c.
Mary Senni. S. lilac, flushed red brown. F. violet and lilac margin. 20c.
Mauna Loa. Tall and conspicuous. Reddish flowers. 30c.
Melchoir. 36". S. bronze velvet, F. velvety crimson violet. 6 inch flowers. 20c.
Messaline. 38". Very large. Red brown and red violet blend. 15c.
Mildred Presby. 30". S. creamy white; F. velvety pansy violet, in striking contrast. 20c.
Mirasol. Bright deep chrome yellow. Fine form. 30c.
Mme. Cheri. Large pink and violet blend. 20c.
Mme. Durand. Tan and mauve blend. 25c.
Moneta. Tall, red purple and violet bicolor. Off season bloomer. 25c.
Ningal. Magnificent blend of pastel shades in rosy buff. Hay's lilac to white with bright yellow in throat. 35c.

- Numa Roumestan.** 36". Intensely red. 15c.
- Pacific.** 36". Gigantic deep blue. A magnificent early iris. 25c.
- Pale Moonlight.** Very pale blue. 35c.
- Persia.** Bright blue blended with smoky blue, like a Persian rug. Fragrant, massive. 25c.
- Picador.** Variegata. Gold and red brown. 25c.
- Pres. Pilkington.** 40". S. vinaceous buff over old gold. F. soft violet edged silvery brown. 15c.
- Purissima.** 44". The most perfect white. Gigantic flowers. 15c.
- Querida.** 42". Blended pastel tints, mauve to white. Fragrant. 15c.
- Red Dominion.** Deep red. One of reddest. 30c.
- Red Ember.** Very striking bicolor. S. pink. F. velvety crimson. 25c.
- Rialgar.** 22". Deep buttercup yellow and bronze. Very showy. 20c.
- Rosultra.** 40". Early, bright rose. Fine garden effect. 20c.
- Sacramento.** A giant plicata like San Francisco but edged red purple. 25c.
- Sandakan.** Tan and purple bicolor. 20c.
- San Francisco.** 44". Finest, largest plicata. Lavender blue on white. Dykes Medal. 15c.
- San Gabriel.** 60". Pink lavender. Extra fine. Too early for east. 15c.
- San Luis Rey.** 38". Large red purple. 15c.
- Santa Barbara.** 40". Finest lavender blue. Very large, perfect form. 15c.
- Sequoiah.** 36". Reddish color. F. margined lighter. 20c.
- Shasta.** 40". Gigantic snow white. Perfect form. Early. 15c.
- Sir Michael.** 48". S. clear lavender blue; F. red purple suffused copper brown. One of the world's best iris. 25c.
- Souv. de Mme. Gaudichau.** 36". Dark velvety blue purple. Fine form, early and fragrant. 15c.
- Tenaya.** Dark red-purple. Very outstanding. 40c.
- Thos. R. Bacon.** Soft ivory yellow blended gray to violet in center of falls. Very attractive. 25c.
- Valor.** Blackish blue-violet bicolor. Large, rich, fine. 20c.
- Wonder Child.** Very large, deep pansy purple. Magnificent, profuse bloomer. Best dark iris. 30c.
- Yves Lassilly.** Very large white, suffused sky blue. 20c.
- Yvonne Pellitier.** Pallid blue-violet blending to light violet. 20c.
- Iris Collections. No. 1.** One each of Mauna Loa, Mirasol, Ningal, Canyon Mists, Cucamonga, Depute Nomblot, Happy Days, Los Angeles (or San Francisco), Purissima (or Shasta) and Pacific. Ten varieties, all labelled. List value \$2.50, for \$2.25.
- No. 2.** One each of Mme. Durand, Thos. R. Bacon, Sacramento, Blue Beard, Buechley Giant, Francheville, Desirable, Picador, Claridad and Attitash. Ten varieties value \$2.40 for \$2.15.
- No. 3.** One each of Valor, Pale Moonlight, Blue Velvet, Indian Chief, Mme. Cheri, Loudoun, Arcadia Blue, Golden Cataract, Santa Barbara and Blue Beard. This collection contains several fall bloomers. Ten varieties, value \$2.60 for \$2.35.
- No. 4.** One each Indian Chief, California Blue, Alta California, Querida, Pres. Pilkington, San Luis Rey and Purissima. Seven varieties, value \$1.25 for \$1.10.
- No. 5.** Includes collections Nos. 1, 2, 3 and 4. Thirty-seven varieties all different, labelled. List price \$8.75. Price of all four collections \$7.75.

We reserve the right to substitute equal or better sorts and values if we run out of any. However, it seems unlikely that we shall. **Remember.** Iris do not flower from recently planted rhizomes. You gain nothing by planting before the 1946 blooming season is thru. For best success we advise you to file your order, with remittance, early and ask for delivery when thru flowering. Delivery also thruout summer and fall.

GLADIOLUS

In order to avoid damage by thrips, Gladiolus should be planted early. In the north this means as soon as the ground can be worked and there is no more danger of its freezing to the depth of planted bulbs.

In California, southern Arizona to southern Texas, Florida, where winters are mild, they may be planted between November 15 to March 1. There is usually no difference in the time of blooming if planted between these dates.

There is still time to plant Glads in the south and if planted during Feb., depending somewhat on spring weather, one is likely to have flowers for Decoration Day. We usually plant in succession from Jan. 1 to Apr. 1 and our flowers escape thrip damage. In northern Calif. and the coastal region one can safely plant later.

Thrips are very small insects that suck the juices from the plant. This causes the flowers to dry and curl on edges and appear "burned," probably as a result of the depletion of moisture and food in the plant. To avoid thrips damage, three measures are effective: Plant early, in order that plants flower before hot weather and thrips arrive; plant clean treated bulbs; keep Glads always moist by overhead sprinkling. A half hour every evening is usually enough.

Treating bulbs. Mix 4 teaspoonsful of Lysol in one gallon of water. Soak the bulbs 6 hours in this solution. It may be used several times but not after standing over one week. This is an acid solution and encourages root growth instead of delaying it. Do not treat bulbs bought from us. We treat before selling. We do not advise use of mercurial solutions as they injure the bulbs and delay root formation. If naphthalene flakes be sprinkled among bulbs in a bag and top of bag kept closed for about 3 weeks, thrips are killed. This will also kill Aphis that sometimes attack sprouting bulbs of any sort. Use flakes about as freely as you would in packing away woollens, but too much or too long will result in injury of bulbs.

Plant 4" deep; small 3"; bulblets 2". Twice their diameter apart. One can plant two rows, staggered in a 4" wide furrow or closer in a single row. Rows about 20" apart. Alkaline soils produce poor Glads. Soil should be neutral to mildly acid. Leaf mould or peat added is useful. Use no fresh manure, but well rotted manure is fine. Top mulch of leaf mould or imported peat is good.

Keep Glads growing with plenty of water and best culture for at least two months after flowering. Longer is better for this is the period when new bulbs for next season are developing. It is best to dig bulbs in the south, and necessary in the north.

Sizes and Prices. L. means "large," size 1 and 2, 1¼" - 1½" (or more) in diameter. M. is "medium" and includes No. 3 and 4 sizes, ¾" to 1¼" diam. S. means "small," under ¾" diam. Large and medium bulbs give good long spikes. Small bulbs usually bloom in most varieties and when planted early, given good culture and plenty of water they usually make fairly long spikes. Early planted bulblets often flower. Large bulbs bloom earlier and throw more spikes. **Prices** are for one bulb as elsewhere in this catalog. A dozen, all of one sort, costs ten times the price of one unless otherwise stated. Six are sold at dozen rate. Unless priced by the 100, we will sell 100 for the price of 8 doz. and 50 for price of 4 doz. Where a 1000 rate is given, do not order less than 1000 at this rate. We offer no wholesale reductions to any one on Glad Bulbs. Don't forget Sales Tax in Calif.

Substitution. If you order early there is likely to be no substitution, but when out of a variety we send another as nearly like it as possible and of equal or greater value. If you do not approve this, request no substitution.

PLEASE NOTE. We are listing several of the newest and best Gladiolus, this spring. These represent the highest improvements in Gladiolus and are naturally more expensive. To offset the higher cost we are offering these in medium but good blooming sizes. Being bulblet grown, high crowned they should give better flowers than those from large, old bulbs.

Small lots of several varieties are being placed in a mixture and offered at a bargain price.

Albatross. Large pure white. Jumbo 14c ea. L. 7c ea.

Annie Laurie. Beautifully ruffled, rose pink. L. 6c ea. M. 4c.

Bagdad. Tall, large, smoky old-rose. 6c ea.

Ballad. New, beautifully ruffled, salmon pink. Exhibition quality. M. 35c ea.

Betty Nuthall. Popular orange-pink. Jumbo 12c ea. L. 6c.

Big Top. New, giant pink, carmine throat. Exhibition quality. The M. size gives a tall spike. L. 40c. M. 25c ea.

Blue Beauty. Newest and best blue. 1" bulbs, 15c ea.

Burma. New, deep rich rose-red. Exhibition quality. M. 90c ea.

Capeheart. New, salmon-rose. 6" fls., 8 open. Exhibition type. L. 20c ea.

Corona. New. Cream, with pink edge. Some rank it best. 1" bulbs 20c.

Debonaire. La France pink. L. 7c. 70c doz.

Dr. Moody. Early, large lavender-pink. L. 6c.

Elizabeth The Queen. New. The best lavender that has yet been introduced. 1" bulbs 45c ea.

Ethel Cave Cole. New, exhibition type. Tall, large, pink. 1" bulbs 20c.

Golden Dream. Large deep golden yellow. L. 6c.

La Paloma. Early. Vivid bitter-sweet orange. L. 5c ea.

Libelle. Heliotrope blue. The finest in blue color. L. 5c.

Los Angeles. Orange-pink. The most flowers from one bulb. Good forcer. Jumbo 15c. (Give an 8" pot in greenhouse, plenty sun in winter.) L. 5c. M. 3 for 10c.

Margaret Beaton. Exhibition type. Tall white with scarlet blotch. 1", 10c.

Oregon Rose. A decidedly new color tone and most lovely. Rose pink. M. 35c ea.

Pelegrina. Very early, large, deep violet-blue. L. 5c ea. M. 3 for 10c.

Pfizers Triumph. Immense salmon red. L. 8c.

Radiant Orange. Tall, brilliant orange. 5c. M. 3 for 10c.

Red Charm. New. Tall formal spikes of large deep red flowers. M. 25c.

Stoplight. New, brilliant red. Exhibition type. M. 20c.

Wanda. New cream. A sport of Picardy and exactly like it except color. Therefore top quality. 1" bulbs 15c.

Wasaga. Apricot pink. L. 5c.

White Gold. Sensational new creamy white. M. 35c.

Wurtembergia. Fine scarlet with cream throat. L. 7c ea.

Mixed. Many small lots, several large lots and all accidental mixtures are placed in this mixture for closing out at a special price. If you want a large glad garden for a low price, order these. **Special.** Bulbs, 1" and up, sizes 1, 2 and 3, all good bloomers, 45c doz. \$1.75 per 50. \$3.00 per 100. Postpaid. \$27.00 per 1000, by express, collect. Bulbs ½" to ¾", also good bloomers but shorter spikes, 30c doz. 50 for \$1.00. 100 for \$1.75. 1000 for \$16.00. All postpaid.

Bulblets. Our bulblets also contain many small bulbs. The small bulbs and many bulblets, especially if planted early, bloom the first year. **Culture.** Plant early in a 2" wide furrow, thick, almost touching. Cover 2", or in sandy soil 3". Keep wet,—always. They make top quality bulbs at end of season. Price per pint, 50c. Per quart 95c.

Other Bulbs of Iris Family

Marica gracilis. Walking Iris or Apostle Plant. The fugitive 2" flowers, white and blue with yellow and brown markings in center, are lovely. The flowers are followed by a small plant at end of scape. These become heavy and bend over to ground and take root, thus walking away from mother plant. **Culture:** give nearly full shade, plenty water, never drying out. Tender tropical but grown in pots in north. 50c ea.

Marica northiana. Very similar but much larger and more rare. \$1.00 ea.

Tigridia pavonia hybrids. Tiger Flower or Shell Flower. Large, very showy flowers of yellow, orange to rose and red. Plant as soon as weather is settled and frost danger is past, in good soil, 3" deep, 5" apart. We give a little shade as our sun is very hot. Along coast or in the north it may not be necessary. Water well when rains fail. They can be grown in a greenhouse. In the north, dig like Glads and store dry. Bulbs sell for a higher price now but we can offer a special price. **Assorted varieties**, 4 bulbs for 35c. Per doz. \$1.00. **Wholesale price**, \$7.00 per 100, postpaid.

LILY FAMILY—Liliaceae

The type species is *Lilium*, or true Lily. Many call *Crinums*, *Callas*, *Cannas* or any bulbs "Lilies," but this is an error.

***Lilium regale*.** Large fragrant, white flowers, tinted pink with cream throat. This is one of the hardiest and is easy to grow. It increases in size and number every year and becomes permanently established in the garden. It belongs in the perennial border along with Daylilies, *Crinums*, shrubs, etc. They prefer mildly acid soil and the addition of leaf mould and sand to your soil will give improved results. Mulch the ground or plant among shrubs or other plants that shade the soil surface but allow the plant to rise into the sunlight. Keep their feet cool and their heads warm. Large bulbs, 35c ea.

Liliums*, *pardalinum giganteum, (60c ea.) **Shuksan**, (75c ea.) and **Willmottiae**, (60c ea.) may still be planted if done soon. Not available after Feb. 15.

Gloriosa. **Climbing Lily.** The flowers resemble true lilies but surpass most of them in their gorgeous beauty and high coloring. They propagate by tubers instead of bulbs. The stem is branching and heavy and must be supported.

Culture. They must have sandy soil with leaf mould and peat added, acid (about pH 6.5), full sun or slight shade, plenty of water, perfect drainage. We usually plant before Mar. 1, but sometimes as late as May. They need a long season. Plant 4" deep. Horizontal position. In the north they may be started early in pots and shifted.

Gloriosa rothschildiana. It deserves the name, **Glory Lily**. Very vivid colors, red with yellow markings, turning later to deep red and then deep rose. 4 to 6 ft. tall. Tubers are priced according to length. 4" tuber, 60c. 5" for 85c. A few Jumbo bulbs at \$1.50 up to \$3.00.

OXALIS FAMILY—Oxalidaceae

No bulbs have increased more rapidly in public favor in recent years. This probably results from magazine and radio publicity, and their more frequent appearance in gardens or as house plants. Plants and flowers are variable in form and color and are most attractive and dainty. **Culture.** Plant in full sun exposure in any good soil. All make lovely pot plants and should be grown freely in the garden. The flowers open only in the sunlight.

See the Fall Catalog for the winter growing types. The following are summer growers. In the north they may be potted now. Start slowly. Do not over water.

Oxalis Bowiei. (Hort. Bowieniana.) Altho this species grows quite well in the winter, it can be potted at this time or planted in the garden in early spring. It seems to be the most popular Oxalis. Large bright green leaves and large bright rose red flowers on a tall scape. 3 bulbs to a 5" pot. 3 for 20c. 60c doz.

O. crassipes. Flowers bright rose. Evergreen and everblooming. Increases by tubers and can be moved at any time. Plant at once. Large tubers, 25c ea.

O. lasiandra. The prettiest summer Oxalis. Tall plant with 7-10 leaflets. Rosy carmine flowers. 5c ea. 6 for 25c. Jumbo bulbs, 10c ea. 75c doz.

O. tetraphylla. Four large leaflets. Deep rose pink flowers on a tall stem. A fine species. 10c ea. 90c doz.

THE ORCHID FAMILY

The Orchid situation was explained in our Fall catalog. It is getting no better, very rapidly. We cannot grow enough Cymbidiums to supply our demand and we can't buy them wholesale.

We would as soon keep what we have, and let them grow and increase. But we will offer them. My advice is to buy only in small quantity. They will be cheaper, but I don't know when. It is comforting to know that when prices are down to one-half of present prices if you buy now you will very likely have twice as many or as large plants—established and blooming.

Cymbidiums, and all the Orchids we list are "Terrestrial." That means they grow in the soil. Cymbidiums have large 4" to 6" flowers borne on a stem up to 4 ft. long, and from 12 to over 30 on the stem. Well established plants may give 4 or more and large clumps up to 35 stems. The flowers sell retail for about \$2.50 each and up. The flowers remain in perfect condition for 2 or 3 months. The cut flowers are long-lasting and may be used many times in a corsage if kept in a refrigerator between times.

Cymbidiums have the typical orchid form in a wide range of colors. Accurate color descriptions of hybrids are impossible as all the seedlings from a cross are given one name tho the seedlings vary slightly in color. The descriptions we give are only approximate.

Culture. Cymbidiums are from India and Burma where they grow in the moist atmosphere of mountains and foothills in perfectly drained locations. Under correct culture they are very easy to grow, but note the requirements carefully. You cannot plant them and forget them. The shade of a lath house, lath spaced 1" apart, 50% shade, is about right. They do well in this exposure, or even a little more sun in our hot inland valleys and in cooler coastal regions the lath may be farther apart. The shade of trees giving filtered light and full sun in early morning or evening suits them well. They need a sandy or gravelly loam of acid reaction. In preparing our soil we dig to a depth of 10" and the same distance on each side of plant. We fill this hole with peat or peat and leaf mould. This is thoroly mixed with the soil thrown out, wet a little and pressed down. The elevation resulting may be rounded over on sides.

The base of the plant is enlarged into a pseudo-bulb, surmounted by the foliage. This bulb must not be covered by soil. Insert it to a depth of only about $\frac{1}{3}$ of its length. The plant may need support until roots form.

Set the plants in moist soil and water after planting to settle soil around them. At first, they must be kept only slightly moist until roots have developed. If moisture is excessive the psuedo-bulb will rot and the plant is lost. In warm weather, when plant is in full growth they will use more moisture. We sprinkle then a little every day or two. They make scant growth if allowed to become dry between waterings. But at no time should they be kept in a soggy condition. Provision must be made for perfect drainage in pots or garden.

Customers are sometimes alarmed if the roots of plants appear dead when received or if roots have been removed. When Cymbidiums are moved, the roots usually die back to the pseudo-bulb. Roots usually start in about 6 weeks.

Sometimes when moved, the inexperienced grower neglects his plant a little and the foliage dies. This is not fatal. The pseudo-bulb has only become a back-bulb. The foliage will never be replaced but a new plant will start at base of bulb in from 2 to 6 mo. if you keep it moist.

In pots, they are reasonably easy. They can be grown in the same compost as required by Begonias or in soil as we described for outdoor culture. Give them a medium warm situation, not as cool as most plants require. We suggest an 8" to 10" pot.

The plants we offer consist of a single pseudo-bulb and foliage. They should flower in two years with correct culture. We have had less than 1% flower in a year or less, tho it can happen. Even large plants when moved without soil require a year.

We send out only good plants. We have been held responsible for plants that died from no water at all and from too much. We cannot longer accept responsibility for wrong handling.

We ship by prepaid parcel post but we do not accept responsibility for freezing in transit to the north. You can avoid this risk by asking for delivery after April 1, or have them shipped by express, f. o. b.

Butterfly. Yellow to buff with red lip. \$12.50 ea.

Doreen. Greenish orange, yellow lip, spotted purple. \$12.50.

Giganteum. A robust, large plant. Flowers are smaller than some but as they are first to flower they have no competition. \$12.50.

Insigne. White, flushed pink to deep rose pink. Very small plant. Thus well adapted for growing in pots. One year old plants with back bulb attached. Single plants, \$7.50.

Moir. Shades of cream and yellow with crimson and purple markings on lip. \$15.00.

Veitchii. This species grows vigorously and multiplies rapidly. It has very pretty, large flowers with the fault of having few flowers on the stem. \$8.50.

Winter Cheer. Cream with pink dots and veins. Red dot on lip. \$12.50.

Zebra. Tall, robust plant. Pink flowers. \$15.00.

Assorted varieties. These are small, 1 yr. old plants attached to back bulbs. The bulbs were from a well known eastern cut flower grower who had some very good imported varieties. He refused to label bulbs hence no name attached to these. Single plants, \$6.50, until June 1. Thereafter, \$7.50.

Epidendron O'brienianum. The tall stems grow to a height of 3 ft. or more, are slender and require the support of adjoining plants or stakes. As the plant grows it produces terminal clusters of flowers thruout all the year, when warm. This large cluster is composed of many small brilliant red flowers of a typical orchid form. Below each cluster as it withers, a lateral bud develops and continues the upward growth. At its base aerial roots develop. Propagation is effected by planting these air-rooted branches.

Culture. Epidendrons need a warm, almost full sun exposure and constant but not excessive moisture. They will grow in well drained sandy or sandy loam soil containing some gravel but it is better to incorporate 50% leaf mould or 35% or more peat for a distance of a foot around and under the plant.

Price of **E. O'brienianum**: Cutting with aerial roots, 75c.

THE CALLA LILY FAMILY—Araceae

This family contains the so-called Calla Lilies or Zantedeschias, Fancy Leaf Caladiums and the genera, Sauromatum, Amorphophallus and others listed in our fall catalogs.

Culture. **Baby Callas** are the only white callas that can be moved now. Grow them in slight shade to full sun in pots or garden. The soil should be half sandy loam, half fine leaf mould. **Baby Calla** is evergreen and should never be dried off.

The **Colored Callas**, Yellow, Pink and Spotted Leaf do exceptionally well in pots. They start more easily now than in late Dec. Give them a 5" or 6" pot, soil like Baby. Cover bulb 1". Keep only moist, not wet, until well up. Manure water is a good fertilizer, when growing well. Give them a warm sunny window. If too sunny a lace curtain may be enough shade. They usually bloom quite early, only a few weeks after planting. They are fine in the garden. Here we plant Feb. 15 to Apr. 1, in a lath house or other half shade. Dig bulbs and keep them dry as soon as tops yellow. See other culture notes with listings.

Zantedeschia aethiopica var. **Baby Calla.** This is the smallest and the whitest calla. Small enough for corsage. We send small bulbs as the large bulbs make larger flowers, approaching in size those of Godfrey. For tiny 1" flowers replant your small bulbs. 20c ea. 3 for 50c. \$1.75 per doz.

Z. albo-maculata. Spotted Leaf Calla. White flower. The spear shaped spotted leaves are most decorative even without flowers. 20c and 35c ea. Jumbos 50c ea.

Z. elliotiana. Yellow Calla. The most desirable colored Calla. The lovely deep yellow flowers, with the spotted foliage, make a perfect, easily grown and low priced pot plant. Ours are extra fine, high crowned bulbs. 20c, 35c and 50c ea. \$2.00, \$3.50 and \$5.00 per doz.

Z. rehmanni. Pink Callas. These are scarce this year. We sold out our own. Bought more and sold them. We have only a small remnant of very large bulbs for \$1.00 and \$1.50 ea. These are mostly the shell pink var. "elegans" that is almost white when forced.

Amorphophallus revieri. Sacred Lily of India. Rich tropical foliage and 2 ft. long flowers. Arum "fragrance." Plant 4" deep, half shade, early spring or pot now. Bulbs at 10c, 50c, \$1.00 up to \$2.50 ea. Only largest bloom and our largest may not all bloom.

Sauromatum venosum. Lizard Lily. The spathe is very long, narrow, lies on ground and is serpent like in color. Same culture as above. Hardy. Order early as all bloom by Mar. usually. Bulbs at 10c to \$1.50. Only largest bloom.

Fancy Leaf Caladiums

They are the most gorgeous pot plants grown. The foliage shows the brilliant and exquisite tones of the Lily and Orchid, the richness of Coleus and the luscious shades of the Rose. There is not a single plant in creation that will condense so much color in an equal space. They are perfect pot plants.

Culture. They should have very rich sandy loam, with equal quantity of humus. This humus should be half well rotted dairy manure. If old dairy manure is not available, use fine rotted leaf mould. Enough of the humus should be peat to render the soil at least neutral to slightly acid. pH 6.5 to 7 will do.

Caladiums must have warmth in all stages. When starting and growing. Even when dormant, store the bulbs in a warm room. Do not try to start the bulbs in a cool room. They must not be planted outside until quite warm. Caladiums are chiefly used as pot plants. They do well in outside gardens but require much humidity. In the dry air of So. Calif. the plants should have constantly moist soil. Semi-aquatic conditions are fine but not wholly essential. But start them off with only slight moisture. When they are up, gradually increase. Give very weak liquid fertilizer when in full growth. Plant about 3" deep. Full sun brings out the rich colors but So. Calif. sun is too "full." We give slight shade.

Mrs. W. B. Haldeman. Beautiful transparent rose leaf, pea green veins with narrow dark green border. One of the very finest varieties and a strong grower.

Lord Derby. Beautiful rose pink leaf, with dark green veins and ribs.

Candidum. Snow white leaf with dark green veins and ribs.

D. M. Cook. Ruffled leaf, deep plum colored center, spotted and splashed deep red.

Reconcavo. Deep rose center with carmine ribs on dark green leaf.

Soracaba. Pale rose to white with deep green ribs and veins.

Mrs. Edith Mead. Snow white leaf. Dark green ribs, but differ from Candida.

Specifications. Every variety above is distinct and different. The seven varieties cover the range of Caladium colors. We could offer you small bulbs as low as 15c ea., but cheap, small Caladiums are usually disappointing. Our bulbs are 1½" to 2" diam., firm and solid. When you compare prices, compare size and quality. Price 45c ea. 4 bulbs, \$1.65. Per doz. \$4.75. One bulb of each sort, seven for \$2.75. We label all bulbs. Your selection of varieties.

Wholesale. Our selection of varieties but all are included, labelled. Price \$30 per 100. 50 for \$17.50. Not less than 50 at wholesale. By express, f. o. b.

BEGONIA FAMILY—Begoniaceae

Tuberous Rooted Begonias. Wonderfully attractive bulbous plants for pots or a cool moist spot in the garden. They are nice around a Camellia if not too shaded. Altho we think we have enough Begonias, Caladiums and Gloxinias, it is wise to order at once as the bulbs are not plentiful and the demand will be heavy.

Culture. The best soil is half humus and half fine sand or sandy loam. For humus, use $\frac{2}{3}$ peat or leaf mould and $\frac{1}{3}$ well rotted cow manure made fine by rubbing thru a screen. Acid soil is required. Improve this soil if convenient by adding charcoal or a small tablespoonful of soot. Give manure water and soot water (handful to $2\frac{1}{2}$ gal.) during growth. Sprinkle daily when growing well but there must not be too much moisture around bulbs before they sprout or they may rot. A good way to start Tub. Begonia bulbs as well as F. L. Caladiums or Gloxinias is in or on top of slightly moist peat or spagnum moss in a warm room. Don't hurry them and do not expect them to start too early. Another way is to pot them only when sprouts start. Keep them growing well all summer and fall. In Dec. they may be gradually dried off if blooming has ceased.

We offer Tuberous Begonias in the following types:

Giant Double Camellia Flowered. This is the most popular type. The flowers are as perfect as a Camellia which they resemble. They are available in 21 colors as follows: White, Blush, Pink, Rose, Rose Red, Rose Pink, Salmon Rose, Crimson Rose, Orange, Flame Orange, Orange Scarlet, Light Salmon, Dark Salmon, Salmon, Apricot, Scarlet, Red, Dark Red, Cardinal Red, Yellow and American Beauty. Bulbs $1\frac{1}{4}$ " - $1\frac{1}{2}$ " diam. Price 30c ea. \$3.00 per doz. The 21 colors for \$5.00.

Giant Double Carnation Flowered. Available in the following 14 colors: White, Blush, Pink, Rose, Yellow, Apricot, Orange, Red, Dark Red, Scarlet, Salmon, Red Salmon, Dark Salmon and Crimson Rose. Bulbs $1\frac{1}{4}$ " - $1\frac{1}{2}$ " diam. Price 30c ea. \$3.00 per doz. The 14 colors for \$3.50.

Both Collections, 35 varieties of Double Begonias, \$8.25.

Double Rosebud Begonias. Flowers like a rose bud in the following colors: White, Pink, Rose, Salmon and Apricot. Bulbs $1\frac{1}{4}$ " - $1\frac{1}{2}$ " diam. Price 33c ea. One each of the five colors for \$1.35.

All three collections, 40 var. for \$9.50.

GLOXINIAS—Gesneriaceae

Gloxinias rank with Fancy Leaf Caladiums and Tuberous Begonias as showy pot plants, for their foliage as well as for their large and gorgeously colored flowers.

Culture. Plant in about a 6" pot using soil as described for Begonias. Barely cover bulbs. Handle about the same as for Begonias including the feeding and watering. In watering do not let any moisture touch leaves. They require part shade and protection from winds if outside. When flowering ceases and foliage has fully matured gradually lessen the water given. When the foliage has all ripened off, the pots may be stored in a room at about 45° but give just enough water to prevent tubers from shriveling. Toward mid-Feb., those that show signs of growth may be brought out and started.

For two years we have had to refund for most of our Gloxinia orders because, "Sold out." This year we are assured of a fairly good supply but be safe and order early.

We offer $1\frac{1}{4}$ " to $1\frac{1}{2}$ " bulbs in the following varieties: **Blanche de Meru**, rose, white throat; **Emperor Frederick**, scarlet, white border; **Emperor William**, violet, white border; **Etoile de Feu**, scarlet; **Mont Blanc**, pure white; **Prince Albert**, frilled, dark violet; **Princess Elizabeth**, blue, white throat; **Roi des Rouges**, frilled dark crimson; **Tigrinia**, from light rose to dark lavender; **Violacea**, soft violet. Price 50c ea. Ten bulbs, all different for \$4.25. No other rates.

BILLBERGIAS—Bromeliaceae

Billbergias have a rich, tropical appearance with the showiest inflorescence. In both foliage and flowers they are most unusual and most lovely. The foliage is stiff and erect, forming a cup. They are tender tropicals that are easily grown in pots but do well outside in So. Calif.

Being epiphytes they should be rooted in almost pure leaf mould, wood earth (rotted wood), peat or sphagnum moss mixed with a little sand for greater substance. But they do quite well in half sand and half leaf mould or peat. Here they need half shade, but in the house, a sunny window is usually right. Sun brings out rich colors of foliage but don't overdo the sun exposure as it may burn the leaves and prevent their functioning. The "cups" should hold a drink when growing. In the winter they rest and when you start them in winter do it "easy like." Not too much water until well rooted and growing, but never allowed to dry out.

Billbergia nutans. The earliest to flower, often late Dec., usually in Jan.-Feb. The inflorescence is most beautiful. Price 50c. With bud showing, \$1.00.

B. distachia hybrid. Foliage reddish green with cream spots. Long spikes with rose pink bracts and blue margined green flowers. Blooms in early spring and a few in late summer. \$1.00.

B. rubro-cyanea. The foliage has very rich variable markings of green, red and white. Flowers green, edged dark blue with crimson bracts. \$1.50.

N. B. During very cold weather, it is better either to add about 20c for extra postage on very heavy packing or ask for delivery about April 1.

Miscellaneous

Esther Reed Daisy. The favorite, fully double Shasta Daisy. Very useful for cutting. They must be moved while dormant and before Mar. 1, as they are likely to start here about that time. If too cold to plant outside in the north they can be potted and shifted to garden later. Single divisions, 25c ea., 3 for 60c. \$2.35 per doz.

Royal Robe Violet. Large lustrous flowers of deepest violet blue on long stems. Grow them outside or in pots like any other violet. In forcing in pots give a temperature of not over 50°. They do not like heat or too intense sunlight. Price 30c, 4 for \$1.00. Per doz. \$2.90.

Clivia miniata hybrid seed. Plant on top of soil in pot or pan. Soil should be loose and friable sandy loam and leaf mould. Water and cover with pane of glass and keep in full shade. Very little water will be needed for some time and then only enough to preserve a moist condition. If radicles do not penetrate soil, help them. 25c ea. 3 for 60c, 6 for \$1.10. \$2.00 per doz.

How You Can Help Us

Do not make it necessary to write you a letter about your order or to answer questions. That brings your order to my attention first before it goes to the office and packers and causes delay.

Make out your own definite order if possible. I will make out an order if necessary but it often takes several days for me to get to it. Sometimes longer. It can cause a two weeks delay.

Make out your order on any tablet or correspondence paper but in an itemized form.

Don't forget to include your Sales Tax on California orders. If you forget, I must write you a request for its payment.

Do not order from old catalogs. All previous listings and prices are cancelled.

Do not ask if we have bulbs not listed. Unless listed, we have none for sale.

CATALOG

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